

**THE NEW
INTERNATIONAL
YEAR BOOK**

THE NEW
INTERNATIONAL
Year Book

A COMPENDIUM OF
THE WORLD'S PROGRESS
FOR THE YEAR
1941

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FOREWORD

Naturally, in this YEAR BOOK of the events of 1941, the consultant will immediately seek the effects of total war—or the effects as each link toward total war was forged—on the field of his particular interest. The story is here. In some few instances the war was but little more than a shadow by the end of the year; in others it had entirely replaced normal peace-time activities. "War," as stated editorially in *Engineering News*, "uses all the construction tools, materials, equipment, and supplies of peace. It uses them harder, consumes them, and destroys them." The emphasis might well be on "all supplies of peace . . . and destroys them," for, as the last war and all previous wars have shown, the salvage of all but human supplies when war is over is negligible.

Almost every contributor to this YEAR BOOK, no matter how remote from warlike activities his topic might appear during ordinary years, found that "all out" war actually means *all* out—that no one and no interest is exempt, that "war consumes all." So startling was that realization to many contributors after the events at Pearl Harbor brought the United States forcibly into active participation that they seemed to think that their readers might miss the significance. Their articles, each of course written after the close of the year, were introduced (in the copy) by a recital of the dastardly attack on Pearl Harbor and the effect from that latest blow on world progress.

War is definitely the key-note in this volume. Its ugly head has obtruded even into such quiet realms as Photography, in many ways; into Literature, through the under-cover efforts in occupied countries to bolster national morale; into Religion, where it seeks to destroy faiths; even into such non-military pursuits, among many, as Dentistry and Psychiatry. By the time this record is printed, every resident of the country will have learned by the bitterness of lessons that, no matter how humble or exalted his station, he has been obliged in some degree to modify his ordinary habits. Certain articles of food can no longer be obtained; scarcity of rubber and of gasoline is curtailing reliance upon motor transportation; building material, plumbing supplies, and even certain textiles are not available for private use. The paper upon which this book is printed is not as white as the publishers would like, because chlorine, used by paper-makers to bleach the pulp, is more imperatively required in the production of explosives.

Ships, airplanes, and guns; trained men to use them and trained men to produce them—these, in war-time, take precedence over all other wants or desires.

If one were able to detach his mind from personal feeling and view the record objectively, it would be fascinating. A tremendous forest fire is nonetheless a grand spectacle, though it be devastating. So with the swift move of this cataclysmic war. Hitler's strategy—a clasp of friendship with the right hand, a rapier-stab with the left—was again employed successfully against Yugoslavia and, not so successfully, against Russia. By the end of the year, Japan had shown herself an apt pupil of the same maneuver, and with her perfidy War completed its encirclement of the northern hemisphere. Through the year the moves were those of a gigantic chess game—pawns moved cautiously about, a misleading threat by bishop or knight, capture of an occasional minor or major piece, sudden swoop of queen or rook, elusive countermoves. But no move could be made advantageously except through the cooperation of whole nations supporting the pieces on the board.

The record, then, includes not only the gains or losses of military forces and naval forces in the several campaigns, but also the more significant gains or losses of vast bodies of men far from the battle line without whose help battles could not be won. The internal histories of the countries at war, as well as those still at peace, their political developments through the year, their productions of food and other supplies, their achievements in the maintenance of health, their discoveries of new resources, their persistence with that ephemeral thing called "morale"—resulting, in part, at least, from continuance with sports, painting,

FOREWORD

theater, motion-pictures, literature, radio—all are vital factors in the struggle; any one may determine ultimate success or failure.

As with earlier YEAR BOOKS, the topics herein are alphabetically listed, each under logical key-word, but with copious guiding cross-references. The editor and his staff have been confronted with a more arduous task than ever before—to retain all the desirable features, authority, and accuracy for which this YEAR BOOK has long been noted, but in addition to provide space for many new Federal agencies and for adequate treatment of the greatly expanded war itself, and of the many topics closely bearing upon the conduct of the war. Certain curtailments have been necessary. The editor begs the indulgence of contributors whose articles he has been obliged to condense.

Dr. H. A. DeWeerd extends his masterly review of the War (now listed under WORLD WAR) to cover not only the campaigns in Europe and Africa, but also the involvement of Japan and the United States. For many years, the annual review on NAVAL PROGRESS has been ably offered by Captain C. H. McMorris and was to have been again prepared by him. Captain McMorris was stationed at Pearl Harbor on December 7th. Though he promptly wrote that he would be unable to fill the assignment, his letter did not reach the editor until the last day of the year. A more able successor than Mr. Allan Westcott would be difficult to find. The editor is especially grateful to him for his willingness to accept the post of a friend and on short notice to prepare an exceptionally comprehensive and complete review of this most important subject. Similarly, the editor is extremely grateful to Dr. Allan Nevins who, on equally short notice, lent his valuable and understanding assistance to the preparation of the article, UNITED STATES.

So much of interest or value is offered in these pages that it may safely be said that one can scarcely open the book at random without finding some important fact to arrest the eye. Many new topics are included; many new contributors are presented. Among the latter may be named Prof. Alrik Gustafson, DANISH and SWEDISH LITERATURE; Dr. Einar Haugen, NORWEGIAN LITERATURE; A. W. Lehman, RADIO PROGRAMS; Bert Pierce, MOTOR VEHICLES, and Alfred Senn, SWISS LITERATURE. To each who is new to these pages, to those who again honor these pages, and to the hundreds of others who have gratuitously supplied countless items of fact without thought of recognition, the editor desires to acknowledge his indebtedness publicly. To the editors of newspapers throughout the country who have supplied material concerning their respective States, the editor also extends his appreciation.

But above all, no fitting tribute can be paid to the members of the staff of this YEAR BOOK, especially to Mr. Kain, Miss Harmon, Mr. Vizetelly, and Mr. Whitmore. The editor can merely say that from the depths of his heart he appreciates the loyal cooperation, tireless energy, valuable suggestions, and willing spirit constantly displayed by each member even in the face of requirements that often seemed impossible of achievement.

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**THE NEW
INTERNATIONAL
YEAR BOOK**

SPECIAL FEATURES

A thousand or more titles will be found in the YEAR BOOK, arranged alphabetically from AAA to Zoology, and numerous cross-references will direct the reader specifically to the subject he seeks. For convenient reference, certain special features are listed below. For all other titles, see the main topic in its alphabetical position; as, "National Defense," see pages 391-2.

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THE NEW INTERNATIONAL YEAR BOOK 1941

AAA. Agricultural Adjustment Administration. See AGRICULTURE, U.S. DEPARTMENT OF.

ABYSSINIA (ETHIOPIA). See ETHIOPIA, ITALIAN EAST AFRICA under *History*, WORLD WAR under *The Conquest of Italian East Africa*.

ACADEMY, French. See FRENCH LITERATURE.

ACADEMY OF ARTS, Royal. The Royal Academy of Arts, founded by King George III in 1768, is maintained, through the public support of its Exhibitions, for the promotion of the Fine Arts: its main functions are the conduct of a free Art School of Painting, Sculpture, and Architecture; the holding of Exhibitions, free of charge to the exhibitors, of Painting, Sculpture, Architecture, Drawing, and Engraving; and the distribution of charitable funds for the relief of distress among artists and their widows. It is also the chief center in Great Britain for the discussion of matters affecting the interests of the art and artists of the country, and for combined action toward the preservation or creation of important works of art. The Royal Academy carries on its work entirely by the services of its own Members and Staff, who are subject only to the approval of the Sovereign, and not responsible to or financially dependent on any Department of the State. Besides its free Art School it maintains a comprehensive Art Library and a permanent collection of works by Old Masters.

The Membership consists of forty Academicians and thirty Associates, elected by ballot by the Members from among the most distinguished painters, sculptors, architects and engravers practicing in the country.

During 1941 the Royal Academy held its Summer Exhibition as usual, from May 5 to August 9. During September it lent some Galleries for Exhibitions of the National Savings Committee (Posters Competition) and the London Fire Service Artists' Committee; and in November the Royal Society of Portrait Painters held its annual exhibition in a part of the Galleries. During December the Royal Academy, in collaboration with the other principal Art Societies of Great Britain, organized a United Artists' Exhibition of works to be sold in aid of H.R.H. the Duke of Gloucester's Red Cross and St John Fund. The Officers of the Royal Academy for 1941 are as follows: President and Trustee, Sir Edwin L. Lutyens, K.C.I.E., P.R.A.; Keeper and Trustee, Sir Walter W. Russell, C.V.O., R.A.; Treasurer and Trustee, Sir Edwin Cooper, R.A.; Trustee, Sir William Reid Dick, K.C.V.O., R.A.; Secretary, W. R. M. Lamb, C.V.O., M.A.

ACADEMY OF ARTS AND LETTERS, American. A society founded in 1904 by members of the National Insti-

tute of Arts and Letters for the purpose of furthering and representing the interests of literature, painting, sculpture, architecture, and music. Its membership is limited to 50 chairs, vacancies caused by death being filled by elections from the membership of the Institute.

The membership of the Academy as of Nov., 1941, consisted of the following in the order of their election: Bliss Perry, Abbott Lawrence Lowell, Nicholas Murray Butler, Herbert Adams, Archer Milton Huntington, Newton Booth Tarkington, Charles Dana Gibson, Royal Cortissoz, Wilbur L. Cross, Hermon A. MacNeil, James Earle Fraser, Robert Frost, James Truslow Adams, William Lyon Phelps, Adolph Alexander Weinman, Walter Damrosch, Anna Hyatt Huntington, Paul Manship, Cecilia Beaux, Eugene O'Neill, Henry Dwight Sedgwick, Walter Lippmann, M. A. de Wolfe Howe, Frank Jewett Mather, Jr., Stewart Edward White, Deems Taylor, Charles McLean Andrews, Van Wyck Brooks, Herbert Putnam, William Adams Delano, Charles Warren, Bernard Berenson, Chauncey Brewster Tinker, Albert Spalding, Sinclair Lewis, Stephen Vincent Benét, Willa Cather, Ellen Glasgow, Thornton Wilder, Ralph Adams Cram, Edna St. Vincent Millay, Carl Sandburg, Agnes Repplier, Charles Hopkinson, and Paul Philippe Cret.

Throughout 1941 (with the exception of the summer months) a joint exhibition of the works of Childe Hassam, a member of the Academy who died in 1935, and of Edwin Austin Abbey, a member of the Academy who died in 1911 has been shown in the art gallery, and will continue indefinitely. The Abbey paintings were lent by Yale University. This gallery and the permanent museum are open and free to the public from 1 p.m. to 5 p.m. weekdays and from 2 to 5 p.m. Sundays and holidays.

Officers of the Academy elected in 1941 were: President, Walter Damrosch; Chancellor and Treasurer, James Truslow Adams; Secretary, William Lyon Phelps; Directors: Stephen Vincent Benét, Van Wyck Brooks, William Adams Delano, Charles Dana Gibson, Deems Taylor, and Chauncey Brewster Tinker. Administrative offices are at 633 West 155th St., New York City.

ACADEMY OF DESIGN, National. An organization of American artists, established in New York in 1825 and incorporated in 1828 for the purpose of "cultivation and extension of the arts of design." In 1906 the Society of American Artists merged with the Academy.

The Academy maintains annual Exhibitions of painting, sculpture, and engraving, to which all

artists may contribute, subject to jury. At these exhibitions various prizes are awarded. It conducts an Art School at which no tuition is charged. It also administers the Henry W. Ranger Fund for the purchase of paintings to be presented to various museums. Its membership is limited to professional painters, sculptors, workers in the graphic arts, and architects.

The Academicians elected at the annual meeting in April, 1941, were: Painters—Paul Sample, Luigi Lucioni, Alphaeus P. Cole, N. C. Wyeth, Junius Allen, Isabel Bishop, Dines Carlsen. Sculptors—Charles L. Hinton, George Snowden. Architect—Benjamin W. Morris. Graphic Arts—Stow Wengengroth.

The Associates elected in March, 1941, were: Painters—Peter Hurd, Ernest N. Townsend, Carroll S. Tyson. Sculptors—Richard Recchia. Architect—Charles D. Maginnis. Graphic Arts—Grace Albee, J. J. Lankes, Rudolph Ruzicka.

Elected officers are: Hobart Nichols, President, Edward McCartan, First Vice-President; John Taylor Arms, Second Vice-President; Charles C. Curran, Corresponding Secretary; Georg Lober, Assistant Corresponding Secretary; Charles S. Chapman, Recording Secretary; Frederick Ballard Williams, Treasurer; Charles Keck, Assistant Treasurer. The Galleries and Executive Offices are located at 1083 Fifth Avenue, New York.

ACADEMY OF SCIENCES, National. The National Academy of Sciences was incorporated by Act of Congress in 1863 for the purpose of investigating, examining, experimenting, and reporting upon any subject of science or art whenever called upon by any department of the United States Government. Membership is by election, as described in the **YEAR BOOK** for 1940.

At the Annual Meeting held in Washington, D.C., April 28, 29, and 30, 1941, 15 new members and three foreign associates were elected. The Henry Draper Medal was presented to Dr. Robert Williams Wood, of Johns Hopkins University, in recognition of his contributions to astronomical physics.

At the Annual Meeting, the Academy established, under its charter, the organization for the National Science Fund for the promotion of human welfare through the advancement of science. The National Science Fund will receive from individuals or others, donations, bequests, grants or other gifts of money to be expended in such manner as in the judgment of the Board of Directors of the Fund will best promote human welfare through the advancement of science. The Board of Directors consists of the President and Treasurer of the Academy, the Chairman of the National Research Council, and the President of the American Association for the Advancement of Science, during and by virtue of their office, together with additional members (both members and non-members of the Academy) appointed by the Council of the National Academy of Sciences. The Fund will be operated exclusively for scientific, literary, or educational purposes and no part of the net earnings of the Fund shall inure to the benefit of any private individual, and no part of the activities shall consist in carrying on propaganda or otherwise attempting to influence legislation. The Board of Directors of the National Science Fund have an office at 515 Madison Avenue, New York City, to which should be addressed all inquiries concerning the Fund.

The Autumn Meeting was held at the University of Wisconsin, Madison, Wisconsin, on October 13, 14, and 15, 1941. The Academy publishes an

Annual Report, Biographical Memoirs of its deceased members, occasional scientific *Memoirs*, and monthly *Proceedings*. The officers of the Academy are: Frank B. Jewett, President; Isaiah Bowman, Vice President; L. J. Henderson, Foreign Secretary; F. E. Wright, Home Secretary; J. C. Hunsaker, Treasurer; and Paul Brockett, Executive Secretary. The Academy building is at 2101 Constitution Avenue, Washington, D.C.

ACCIDENTS. The 1941 accident toll in the United States, according to National Safety Council estimates, amounted to 101,500 deaths, about 9,300,000 persons injured and direct costs aggregating 3¼ billion dollars. These totals represent increases of 2 to 5 per cent from 1940. The preliminary estimate of property destroyed or damaged by fire was \$322,000,000, also 5 per cent above the comparable preliminary estimate for 1940.

The trend of accidental deaths over the last decade has been mixed. In 1931 the total was 97,261. In 1932 it reached the low of 89,031, but in 1934 it was up to 100,977 and in 1936 to 110,052. These two high totals were in part due to the large number of deaths from excessive heat.

The following table shows the 1940 and 1941 death totals for the four principal classes of accidents, together with the per cent increase in each class:

	1941	1940	Change
Total	101,500	96,885 *	+ 5%
Motor Vehicle	40,000	34,501 *	+ 16%
Public (not motor vehicle)	14,500	15,000	- 3%
Home	32,000	33,000	- 3%
Occupational	18,000	17,000	+ 6%

* The 1940 figures for total and motor vehicle are from the U.S. Census Bureau. All others are National Safety Council estimates. The totals exclude duplication of occupational-motor vehicle deaths.

The 1941 accidental death rate per 100,000 population was 76.2. Comparable rates are: 1940, 73.4; 1930, 80.5; 1920, 71.3; 1910, 84.4.

Heart disease, cancer, cerebral hemorrhage, and nephritis were the only causes of death exceeding accidents in 1940, according to U.S. Census Bureau data. Preliminary information indicates the same ranking for 1941. Among males, alone, accidents have for several years been either the second or third most important cause of death, being exceeded by heart disease and, in some years, cancer. From age 3 to 25, both sexes, accidents caused more deaths than any disease in 1940. In 1939, among males they were first from age 3 to 38.

The 1941 accidental deaths were distributed by age as follows: 0-4 years, 7,150; 5-14 years, 7,100; 15-24 years, 14,250; 25-64 years, 45,350; 65 years and older, 27,650. The 1940 Census population figures by age are not yet available, but it is certain that the highest death rate per 100,000 population was for 65 years and older—in the neighborhood of 310. In contrast, the rate for children 5 to 14 years old was only about 32, or one-tenth as much. In most recent years the rate for elderly people has been rising steadily, while that for school children has been going down, although in 1941 there was a small reversal of this trend.

Motor Vehicle Accidents. The 1941 motor vehicle accident death total of 40,000 represents an increase of 16 per cent from 1940. However, there were also 11 per cent more vehicle-miles driven in 1941, and the death rate per 100,000,000 vehicle miles therefore, rose only 4 per cent to 12.6. Since 1931, when the death rate was 17.0, there has been a 26 per cent reduction in the rate.

In addition to the deaths, about 1,400,000 per-

sons received nonfatal injuries in motor vehicle accidents during 1941, or one out of each 95 persons in the United States. Wage loss, medical and insurance costs amounted to about \$900,000,000; and property damage to approximately an equal amount—a grand total of \$1,800,000,000.

The increase in motor vehicle deaths from 1940 to 1941 came principally from rural accidents. These rose about 21 per cent to a total of 25,500, while deaths from accidents in towns and cities went up only 7 per cent to 14,500. Pedestrian deaths increased 11 per cent, to a total of 13,900. Nonpedestrian fatalities totalled 26,100—up 19 per cent from 1940.

Increases in deaths were recorded for all age groups. There were 11 per cent more fatalities among children under 5 years in 1941 than in 1940. Deaths in this group numbered 1,300, compared to 1,176 for the previous year. Deaths of school children, 5 to 14 years, rose 16 per cent, from 2,584 to 3,000. This is one of the few increases that have interrupted the downward trend that started two decades ago. Deaths in the 15–24 age group went up 24 per cent from 6,846 to 8,500. In the 25–64 age group fatalities numbered 20,900, or 15 per cent more than in 1940. For persons 65 years or older the death total rose 11 per cent from 5,651 to 6,300.

Public Accidents. Deaths from public (not motor vehicle) accidents decreased to 14,500 in 1941, from the 1940 total of 15,000. In 1931 these deaths numbered approximately 20,000. The ten-year decrease amounted to 27 per cent. The 1941 nonfatal injury total was approximately 1,750,000. Wage losses, and medical and insurance expenses amounted to about \$400,000,000.

Some types of fatal public accidents decreased in 1941; others increased. Deaths from burns dropped sharply, partly due to the 1940 total including the Natchez, Miss., dance hall disaster. Falls decreased about 1 per cent. Drownings rose 2 per cent; fire-arms accidents 9 per cent. Airline companies had four fatal accidents. Thirty-five passengers were killed in these accidents, the same number killed in the three 1940 accidents. Railroad passenger fatalities dropped to about 30, according to 11-month reports, but trespasser deaths rose 7 per cent to approximately 2,300.

Home Accidents. Deaths from home accidents decreased from 33,000 in 1940 to 32,000 in 1941. In 1931 home accident deaths totalled only 29,000. Nonfatal injuries in 1941 numbered about 4,700,000. Wage losses, medical expense and insurance costs amounted to approximately \$600,000,000. Most types of accidents shared in the decrease. Falls dropped 2 per cent, burns 4 per cent, absorption of poisonous gas 9 per cent, and poisonings 11 per cent. Firearms accidents, in contrast, increased 12 per cent.

Occupational Accidents. The 1941 death total for occupational accidents was 18,000, an increase of about 6 per cent from the 1940 total of 17,000. The 1931 total was slightly lower—17,500. There were approximately 1,600,000 nonfatal injuries in 1941. Total wage loss, and medical and insurance expenses amounted to about \$750,000,000.

The only major disaster in 1941 was a ship and pier fire at Brooklyn, N.Y., in which 34 longshoremen and 2 repairmen lost their lives.

The increase in occupational accidents was accompanied by greater employment. According to the U.S. Department of Labor, manufacturing employment increased 17 per cent over 1940, and total nonagricultural employment went up 9 per cent. However, accident rates based on man-hours

worked, and covering both fatal and nonfatal injuries, were higher in 1941. Plant safety contest reports show an increase of 8 to 20 per cent in the frequency rate (injuries per million man-hours), but a substantial decline in the severity rate (days lost per thousand man-hours).

See AERONAUTICS under *Domestic Air Transport*; INSURANCE; LABOR CONDITIONS under *Health and Safety*; RAILWAYS; VITAL STATISTICS.

A. D. BATTEY.

ADEN. See under ARABIA.

ADULT EDUCATION. See EDUCATION; LIBRARY PROGRESS. Compare topics listed under DEFENSE TRAINING.

ADVANCED STUDY, Institute for. An institution of higher learning founded in 1930 by Mr. Louis Bamberger and Mrs. Felix Fuld. The Institute is different in character from any other American educational institution in that it is planned for students who wish to pursue advanced research beyond the level of the doctor's degree. It has no tuition fee, no routine requirements, no examinations, and awards no degrees. The work is largely individual, though there are seminars and courses of lectures in some subjects. The Institute consists of three schools: mathematics, economics and politics, and humanistic studies. It maintains also in cooperation with Princeton University the Gest Oriental Library on Chinese literature. Since September, 1940, several members of the Economic and Financial Section of the League of Nations have been housed in Fuld Hall, where they carry on the regular work of their department of the League.

The Institute for Advanced Study is supported entirely by an endowment which amounts to just over \$8,000,000. In addition to the gifts made by the founders, the Rockefeller Foundation has contributed half the cost of the Gest Oriental Library, and the Carnegie Corporation and the Rockefeller Foundation have contributed funds which maintain a number of promising scholars. Located at Princeton, N.J., the Institute has the cooperation of Princeton University, which generously made available all its resources in faculty, libraries, and other facilities for advanced work. In 1941–42 there were 53 members working at the Institute and 32 scholars on the staff, in addition to the director, Frank Aydelotte. Abraham Flexner is Director Emeritus. Headquarters: Fuld Hall, Olden Lane, Princeton, N.J.

ADVENT MOVEMENT. A religious movement which originated in America with William Miller (1782–1849), who believed in the imminent, personal second coming of Christ. There are six Adventist bodies in the United States, the largest being the Seventh-day Adventist Denomination, formally organized in 1860, which observes Saturday as the Sabbath of the Scriptures. Headquarters, Takoma Park, Washington, D.C. For statistics, see RELIGIOUS ORGANIZATIONS.

ADVERTISING. See FASHION EVENTS; LIQUOR PRODUCTION; NEWSPAPERS AND MAGAZINES.

ADVISORY COMMISSION TO THE COUNCIL OF NATIONAL DEFENSE. See NATIONAL DEFENSE AND WAR AGENCIES; TRANSPORTATION DIVISION.

AEGEAN ISLANDS, Italian. See ITALIAN AEGEAN ISLANDS.

AERONAUTICS, Military. By the end of 1941 there could be no further question of the controlling im-

portance of air power in modern warfare. The German sweep through the Balkans, the dramatic capture of Crete, the Japanese drives in the Philippines and Malaya added new lessons to those of the Polish, Norwegian, and Western European campaigns in the effectiveness of a combination of air supremacy with strong surface forces. The 1941 successes of the British in Libya were largely controlled by the air strength they could bring to bear upon the Axis forces and supply lines. The attack upon Pearl Harbor and the sinking of at least three British and Japanese battleships in the first weeks of the Pacific War were a devastating proof of the vulnerability of capital ships to determined air attack. In Russia an unsuspected aerial strength of the defenders, and the Soviet strategy of dispersing their air bases in depth as well as width, prevented the Germans from ever achieving the extreme air supremacy they had exploited so successfully in earlier campaigns. Even so, concentrations of Nazi air power and tank forces played major roles in the sweep that almost reached Moscow and the ultimate extent of Russian counter-offensives seemed at the beginning of 1942 to depend upon Russia's ability to maintain and increase its airpower.

In any case, it was apparent from the programs of production announced by President Roosevelt after his conference with Prime Minister Churchill that the United Nations realized that ultimate victory would require an overwhelming air supremacy in every theater of the war no matter how important land and sea forces might also prove in future campaigns. Within a few weeks after its entry into the war, the United States was rushing preparations to add the facilities of a large part of its automotive industry to the capacity of factories already working on a program for the production of military aircraft which it had inaugurated in 1940 and expanded during 1941. Funds in vast quantities were already appropriated and more would certainly be available as needed. It seemed unlikely that any matter of executive jurisdiction, property rights, or labor privilege would be allowed to cause serious interference with the achievement of a goal of 60,000 airplanes in 1942 and 125,000 aircraft in 1943.

The relative strength of the air forces (combat units) of the chief warring powers was estimated as follows in the *New York Times*, Dec. 14, 1941. See also MILITARY PROGRESS; NAVAL PROGRESS; WORLD WAR.

WARRING AIR FORCES*

	<i>Allies</i>	<i>No. of Planes</i>
United States	3,000-5,000
Great Britain	4,500-5,500
Russia	?
China	100-200
Netherlands Indies	500-600
	<i>Axis</i>	
Germany	5,500-8,500
Japan	5,000 [?]
Italy	1,500-3,000
Hungary	400-600
Finland	200-300
Bulgaria	100-300
Rumania	500-700

* Corrected for known losses up to Dec 12.

Two great questions did however remain. The first concerned the quality of American aircraft. The second was the problem of converting factories, machine tools, and labor to the production of a new product within the limited time permitted under the production proposals.

The comparative military excellence of aircraft is an extremely complicated subject and the answering of some published criticisms of American

aircraft was a difficult task. Some American pursuit planes rushed to England or Africa had been found deficient in some respects. Some of these related to armament and armor and were promptly remedied in later production. Others had to do with the necessity of meeting in American types greater requirements of fuel range than are needed in the specialized task of defending the British Isles. Still other complaints seem to have been caused largely by the lack of familiarity of British pilots with American engines and engine control systems and were withdrawn after such familiarity was acquired. American dive bombers and medium bomber aircraft were admittedly the equals of corresponding types in any other air force and long range heavy bombers as built by Boeing and Consolidated were almost universally admitted to be unrivalled elsewhere. With at least four new pursuit types in production or about to go into production which could fly faster than 400 m.p.h. with full armor and armament, American aircraft manufacturers were confident as to the quality of their product.

The nation's ability to meet the production schedule it had set for itself depended upon many complex factors outside the aircraft industry such as the availability of aluminum, magnesium, and other critical metals; the ability of the nation to protect its coastal factories from attack or interruption until inland units got into capacity manufacture; the organization of new supplies of such non-aeronautical items as machine guns and cannon; the effectiveness of thousands of sub-contractors and suppliers of accessory parts who share in the production of modern airplanes, engines, propellers, and instruments.

The task of meeting a huge numerical quota was also heightened by the fact that the program set called for swiftly increasing proportions of units with a large gross weight and high unit horsepower requirements. Most encouraging, however, was the fact that production in 1941 plotted by months coincided almost perfectly with the chart set for production in that period. Starting with 630 units in January, the curve of actual production rose steeply to an output of approximately 2,400 in December. Total output of the year was approximately three times the total production for 1940 and within a few per cent of that planned for 1941. Another favorable factor holding considerable promise of success of the 1942 program was the fact that the automobile industry had since 1940 been in intimate contact with aircraft problems, had made some substantial contributions to the 1941 effort, and was already geared for active aircraft production on a large scale during 1942 according to a plan in which automotive units were to feed sub-assemblies into new assembly factories being rushed toward completion at a number of mid-western cities. Biggest new task set by the program of January, 1942, was to supplement this automotive participation with production in already existing automobile factories converted to aircraft work. See MOTOR VEHICLES.

World Air Transport. In a world so dominated by war, a surprising amount of international air transport activity continued throughout 1941. While all international air services moved unmistakably toward a state of becoming government instruments for the transport of passengers, mail, and express of importance to national military or political programs, the operating status of most world airlines was little changed between the beginning of 1941 and the entrance of the United States into the war.

The Axis nations maintained at least skeleton services over a number of airlines in Europe. In



Photos by courtesy of the manufacturers

ALL-OUT PRODUCTION OF AIRPLANE PARTS

Above: An Allison liquid-cooled engine in the "tear-down" department (left) where each unit is inspected after a test run, and in a cylinder machining operation (right)

Below: The nose section of a medium bomber, built in an automobile factory, ready for shipment to the Glenn L. Martin Company for assembly.



Press Association and Wide World

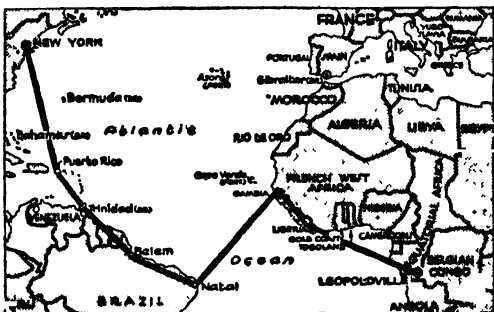
**LOCKHEED P-38 "LIGHTNING" INTERCEPTOR PURSUIT
CONSOLIDATED B-24 HEAVY LONG-RANGE BOMBER
BOEING B-17E "FLYING FORTRESS"
DOUGLAS B-19 ARMY BOMBER SHOWN WITH A CURTISS P-40 PURSUIT SHIP**

fact, even at the end of the year, transport planes of Germany, Italy, Spain, Great Britain, and the United States were continuing to meet in the air over Portugal, to which Pan American Airways was still operating the sole remaining commercial transport service between North America and Europe. The British, in addition to their service to Lisbon, kept up air connections between those parts of their Empire in Africa, India, and Australasia. Although forced steadily to yield to an American drive to eliminate them from the Western Hemisphere, Axis-owned Airlines and affiliates were, in November, still operating more than 30,000 miles of air routes in Latin America, and an Italian line was operating a service across the South Atlantic between Europe and Brazil.

Under the American flag, Pan American Airways in the first eleven months of 1941 carried out wide improvements of service on routes established prior to 1941 in Latin America, Alaska, across the North Atlantic, and across the Pacific to China and New Zealand. In China the China National Airways, in which Pan American Airways is associated with the Chinese National Government, kept open a service between Hong Kong and Chungking. This formed the only link other than the Burma Road between the Chinese capital and the outside world. Many thousands of miles were added during 1941 to the Pan American network. The trans-Pacific route was extended to connect Manila and Singapore on alternate weeks. Cooperating with United States Federal authorities, Pan American and its partner company, Pan American-Grace Airways, added some 15,000 miles of air routes to their lines in South America, largely at the expense of Axis-owned or Axis-dominated operators.

Colombia nationalized the once German airline SCADTA. Peru grounded the Lufthansa subsidiary in that country. Bolivia took over Lloyd Aereo Boliviano, another German subsidiary. Ecuador cancelled permits for still a third German-controlled operation. In every instance Pan American, or Pan American-Grace was promptly awarded operating privileges or at least management contracts. At the same time Brazil was permitting Pan American to extend its operations in her territories in such a way as to parallel and offer superior service along many routes originally established by German companies.

In November, after extensive preparatory efforts, Pan American started service on a 12,000 mile airline from Miami to Khartoum, Egypt, designed to facilitate delivery of American-built military aircraft to the Middle East. Intermediate bases were located in Puerto Rico, Trinidad, Brazil, Liberia, French Equatorial Africa, and the Belgian Congo.



Courtesy of The New York Times

NEW PAN AMERICAN AIRWAYS ROUTE TO THE BELGIAN CONGO

The operation included a clipper service between Miami and Africa, a trans-African landplane airline, and an organization to ferry military aircraft over the entire route. The clipper planes crossing the South Atlantic from Natal, Brazil, landed at either Bathurst, Gambia, or Monrovia, Liberia, and continued on to Leopoldville, Belgian Congo, where they connected with the South African airway network.

The outbreak of the war in the Pacific immediately involved Pan American bases at Midway, Wake, Guam, Manila, and Hong Kong and thus caused the suspension of trans-Pacific service west of Hawaii and the final cutting of the Hong Kong-Chungking operation. Elsewhere, the entry of America into the war left Pan American operations unaffected for the time being. On the positive side, the prompt anti-Axis reactions throughout Latin America after the attack at Pearl Harbor promised an early termination of all European competition in that sphere. See countries under *Transportation and History*.

Domestic Air Transport. The national defense program, the general high level of business activity, and a steadily widening acceptance of air travel combined, in 1941, to produce record volumes of all types of traffic for the seventeen operators of airlines within the continental limits of the United States. Specifically, year-end estimates showed these carriers had, during 1941, transported 3,765,000 passengers, 44,000,000 pounds of air mail, and 18,200,000 pounds of express. These figures represented an increase of almost 40 per cent in both passenger travel and in air-mail poundage and an almost 50 per cent increase in air express over figures for traffic carried during 1940.

The establishment of traffic records better than those of previous years was an old story to the airline industry which had witnessed an unbroken advance of travel and cargo volumes each year since 1934. There were big differences, however, between the way in which such new increments were handled in 1941 and the way they had been handled in previous years. Up to 1941 each operator, in general, had increased the seating and cargo capacity of his airline fleet in step with the growth of public acceptance of his services. In 1941, however, the requirements of America's military forces and the lend-lease program not only cut off the industry's supply of new planes but actually decreased its planes-on-hand through emergency appeals for the diversion of all spare aircraft.

As a result, the airline traffic records of 1941 must be counted largely as triumphs of the airlines' operating and maintenance personnel in making each transport airplane available for substantially more service per year. Of far more permanent significance in the art of air transport than the mere traffic figures is the fact that with fewer units in service, the nation's air transport planes in 1941 actually flew some 134,000,000 miles, a 32 per cent increase over the record of 1940.

Despite the extra burden thus placed upon equipment and personnel, the airline safety record was not markedly discouraging. Although the domestic operators together suffered five fatal accidents during the year, the distance flown per fatal accident—approximately 26,800,000 miles—compared favorably with the average distance of approximately 24,000,000 miles flown between fatal accidents in the preceding three-year period.

Toward the end of the year the Office of Production Management (q.v.) announced the tentative allocation of new aircraft which would permit the nation's airlines to acquire 112 new transport

planes during 1942. Another 116 units were to be held in reserve for possible delivery in 1943. Of the 228 planes thus earmarked for airline service, 156 were to be Douglas DC-3 transports identical with those now in service; 52 were to be Lockheed Lodestars similar to the Lockheed planes delivered in large quantities to the British for coastal patrol work; 20 were to be four-engined DC-4 planes of larger capacity than any planes now in domestic airline service. The only absolutely new transport landplane in active development in the United States during 1941 was the four-engined long-range Lockheed Constellation, of which three were authorized for delivery to TWA and the Pan American Airways System. What effect America's actual war-time requirements would have on these tentative allocations was, of course, not immediately apparent. See States under *Transportation*.

Private Owner Aviation. The relationships between modern war and the development of flying as an activity for the individual are complex. In any area where actual aerial hostilities are in progress, civil flying is necessarily curtailed or completely forbidden, and civilian aircraft and flying facilities are impressed into military service. There has been, in fact, little or no private flying in Europe since August, 1939. Offsetting such deterrents to the current practice of individual flying in certain regions, the tremendous expansion of military air activities offers every expectation that a corresponding increase of peace-time flying will occur once hostilities are ended. Flers, mechanics, and aeronautical specialists are being trained by tens of thousands. Airports are being increased and enlarged. Great productive capacities for aircraft are being created. Air consciousness is being spread in every edition of every newspaper.

In the United States, even after the attack on Pearl Harbor, no serious restrictions upon individual flying were deemed necessary beyond a suspension of Federal certificates for airmen and aircraft until the individual holders thereof could establish their unquestioned loyalty. In the vast majority of cases this was a period of only a few days. Meanwhile the positive effects of the war upon individual flying were already making spectacular aviation statistics in this country.

Prior to 1939 all private flying in the United States had been undertaken and financed entirely under individual initiative. Even under such circumstances, American progress in this field led that of all other nations but there were still at the beginning of that year only 22,983 certificated pilots in the nation. Individuals paying their own expenses for flight training have increased through recent years until they now number about 36,000. In 1939 the Federal government began subsidizing flight training through the Civilian Pilot Training Program, administered in more than 500 colleges by the Civil Aeronautics Authority. By the end of 1941 the total of pilots, both self trained and trained under the C.P.T.P., had reached a figure a few hundreds over an even 100,000. In addition, some 90,000 Americans had taken out student pilot permits and were in some stage of civilian flight training short of qualifying for their Private Pilot's Certificate. During 1941 alone the total of active pilots' certificates (not including student permits) had increased by more than 60 per cent from the 63,113 listed at the end of 1940.

As of Jan. 1, 1942, some 14,000 C.P.T.P. graduates had enlisted in the Air Corps and in the air service of the Navy, and many more thousands were expected by the end of the 1942 school year. The program had also furnished approximately

2,800 civilian instructors for training centers operated directly by or for the military services in the United States and Canada. Immediately after the entry of America into the war a movement was launched to enroll a large part of the nation's civilian pilots who could not enter the military services into a Civil Air Patrol to cooperate with Army and Navy authorities in maintaining an air watch above coastal regions or centers of key industrial importance. They were also to perform other useful duties within the capabilities of civilian aircraft.

Meanwhile, this growth of civilian flying resulted in an increase of civilian aircraft from 17,500 to 27,500 during the year. Figures on the year's production of aircraft for domestic civil use are not yet available, but figures for the first half of 1941 indicated an increase of 65 per cent over the production in 1940, when 6,748 units were delivered.

The great majority of these planes (more than 75 per cent) consisted of two-place single-engined landplanes of less than 100 horsepower. Almost all of them were of a type of construction which differed so radically from that of combat aircraft that their production was considered no serious diversion from the military aircraft program, although the Air Corps had begun ordering several types of these small planes for courier service in the last months of the year.

Active design progress was also achieved in the small plane field during 1941. A second plane, the "Skyfarer" took its place beside the "Ercoupe" as being absolutely incapable of spinning and thus substantially safer for the inexperienced pilot than the orthodox airplane. Several new private-owner aircraft of plastic-bound moulded plywood were placed on the market. At least four substantial aircraft manufacturers were actively pushing the development of helicopters and autogiros. The Northrop Corporation of California disclosed successful test-flights of a "flying wing" airplane from which fuselage and tail surfaces had been entirely eliminated. While all these aircraft had military potentialities and were being actively studied by the military authorities, they were likewise of great potential importance to the future of private-owner aviation.

As a result of regulations requiring the greatly increased use of radio in airport traffic control, low-priced radio equipment for the private flyer became far more widely available than in earlier years.

Airports. With all forms of aviation in the process of tremendous expansion, airports and other ground facilities were substantially extended during the year. With an emphasis on military aviation the airport program in the United States was naturally directed largely to the construction, enlargement or improvement of air fields needed for the direct use of military and naval forces, or so located to be potentially of strategic importance. However, projects involving terminals primarily for transport purposes were not neglected.

Most outstanding event of the year for American airport specialists was the opening of the Washington National Airport in June. Built on soil largely dredged from the bottom of the Potomac River, the new field gave the nation's capital a convenient airport larger than the airports serving New York, London, Paris, or Amsterdam. Berlin's great airport at Tempelhof is still the largest landing field serving a capital city, but the long paved runways and clear approaches of the new Washington field easily make it the equal of Tempelhof

in aeronautical utility. The result of two and a half years' work by several Federal agencies operating cooperatively, the Washington Airport is equipped with a large and well-equipped passenger terminal, several big hangars, and systems for lighting and traffic control which are designed to serve as a model of advanced design for airports throughout America.

During the year the WPA, PWA, NYA, and CCC continued the program of construction, enlargement, or improvement of airports. For some eight years this has been a feature of Federal and work-relief agencies, and of great benefit to aviation. Expenditures during 1941 for such projects involved something over \$100,000,000.

For their own direct use, the U.S. Air Corps and the Bureau of Aeronautics of the U.S. Navy developed a number of permanent new fields. From the viewpoint of airport engineering the most outstanding were the great new naval aviation training centers at Miami, and Jacksonville, Florida and at Corpus Christi, Texas. Military or naval air base projects of great strategic importance were those at Trinidad and Puerto Rico, Panama, Alaska, Hawaii, and other Pacific Islands. The defense of Wake Island, where an important Naval airport project was well under way at the time of attack by the Japanese in December, focused particular attention on this phase of American airport activity.

A number of new airports of strategic value were built during the year in South American countries, particularly Brazil. Many of these were financed largely with U.S. funds furnished for the purpose through American flag airlines.

Within the United States, itself, still another airport program was inaugurated. Carried forward by the Civil Aeronautics Administration of the Department of Commerce, some 385 "defense landing areas" were designated for construction or improvement at a cost of approximately \$200,000,000. A special feature of this program was the provision that each project had first to be approved as of defense value by the Secretaries of War, Navy, and Commerce.

At the end of 1941, the nation's domestic airports numbered 2,453 compared with 2,331 in 1940. They were divided as follows: 1,082 municipal; 901 commercial, 31 private, 78 Army; 39 Navy; 40 miscellaneous government; 283 intermediate fields along Federally maintained airways. Improvement of airport facilities was reflected in the Federal designation of 64 of these airports as "Class 4" airports, adequate for any transport or military aircraft use as against only 23 so designated in 1940. Those of small size and minimum facilities designated as "Class 1" dropped in number from 1,641 to 1,501.

See ELECTRICAL INDUSTRIES under *Steel*; HEATING and VENTILATING; LABOR CONDITIONS under *Strikes*; NATIONAL INCOME; PHOTOGRAPHY under *Industrial Photography*.

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DANIEL SAYRE.

AFGHANISTAN. A kingdom in central Asia. Area, about 251,000 square miles; population, approximately 10,000,000. Estimated populations of the chief towns: Kabul (capital), 80,000; Kandahar, 60,000 (with suburbs); Herat, 50,000; Mazar-i-Sharif, 30,000. Persian, Pashto, and Turki are the principal languages and Mohammedanism is the chief religion. Schools in 1941 included 130 primary, 4 secondary, 13 military, 1 normal, 1 medical college, and a few technical, art, and commercial schools.

Defense. One-eighth of the male population of each city and village must serve in the army for two years. There is also a regular army recruited by life-long enlistment. The normal peace strength of the army is 60,000 men, including the small air force of 100 men with some European-trained pilots. Numerous tribesmen armed with modern rifles are available for service in time of war.

Production. Agriculture and stock raising are the chief occupations, the main products being cereals, fruits, vegetables, cotton, wool, hides and skins, and meat from the native fat-tailed sheep. The mineral resources include iron, copper, lead, gold, silver, lapis lazuli, coal, and petroleum. There are state-owned factories at Kabul, Kandahar, and elsewhere for the manufacture of arms, ammunition, boots, military clothing, furniture, matches, buttons, leather, soap, cotton goods, and wool products.

Trade. India, the U.S.S.R., and Iran are the main trading countries, the chief exports being fruits, nuts, timber, spices, cotton carpets, wool, and skins (1,273,225 Persian lambskins, valued at \$7,422,501, were exported to the United States in 1940). The aggregate value of the transit and direct trade with India in the year ended Mar. 31, 1939, was 46,400,000 rupees (rupee averaged \$0.3328 in 1939, \$0.3659 in 1938).

Communications. Afghanistan has no railways and practically no navigable rivers. Four thousand miles of roads are suitable for motor transport in dry weather, but the bulk of merchandise is still carried by pack animals. An all-weather highway from Kabul to Peshawar, India, was under construction in 1941. It was announced on April 26, 1941, that Russian workers had completed a 500-mile motor highway from Stalinabad, Turkestan, to Khorog, on the Afghanistan border. There are telephones in most of the larger towns. The country has five wireless stations including an installation at Kabul for world-wide communication.

Government. Annual revenues of the state are estimated at 180,000,000 Afghanis (3.95 Afghanis equal 1 Indian rupee). The government is a constitutional monarchy, with legislative power vested in a parliament consisting of the King, a senate of 45 members appointed by the King for life, and a national assembly of 109 elected members. Mohammed Zahir Shah succeeded to the throne Nov. 8, 1933, upon the assassination of his father, Mohammed Nadir Shah.

History. Afghanistan was drawn toward the vortex of the European War in 1941 as a result of the

German attack upon the Soviet Union, the Anglo-Russian occupation of Iran, and German efforts to use Afghan territory as a base for anti-British and anti-Soviet propaganda and intrigue. The young King was reported friendly to Britain, but German agents succeeded in obtaining key positions in technical and commercial fields. In August and September there was a considerable influx of German agents into Afghanistan from Iran to escape capture by the British and Russians. In July the British Minister at Kabul formally objected to German activities in the kingdom. Early in October, the British and Soviet Governments jointly demanded the expulsion or internment of all German residents in Afghanistan. At the same time, British military preparations along the Indian frontier were intensified. On October 19 the Kabul radio announced that the Government had decided to deport all German and Italian nationals. At the end of the month 101 Germans and Italians reached Peshawar, India, on their way home under British safeguard.

See GERMANY, INDIA, and IRAN, under *History*.

AFRICA. A continent of the eastern hemisphere. Area, about 11,740,000 square miles (30,330,000 square kilometers). Population (Jan. 1, 1938, estimate), 155,500,000. See the separate articles on its countries and territories, such as ALGERIA, EGYPT, ITALIAN EAST AFRICA, KENYA, MOROCCO, SOUTH AFRICA, UNION OF; TUNISIA.

AGRICULTURAL ADJUSTMENT ADMINISTRATION (AAA). See AGRICULTURE, U.S. DEPARTMENT OF.

AGRICULTURAL COOPERATION. Agricultural cooperative associations in the United States now constitute one of the most important groups of farmers' organizations. Altogether, there are more than 15,000 farmer-owned and farmer-controlled cooperative associations and mutual companies now operating in this country. Of this number, 10,600 are engaged primarily in marketing farm products, purchasing farm supplies, or performing related services. Mutual irrigation companies number approximately 2,500 and farmers' mutual fire insurance companies number 1,900. In addition there are more than 600 rural electrification cooperatives and a larger number of farmer-owned telephone companies.

On the basis of reported membership and patronage data, it is estimated that more than 3 million persons hold membership in these organizations and at least one-half million more patronize them without accepting the responsibilities of membership. Sales of farm products and farm supplies by cooperatives now exceed 2 billion dollars annually with approximately 300 associations reporting annual sales of more than a million dollars each and 35 or 40 associations reporting sales in excess of 10 million dollars each. However, no "still picture" of agricultural cooperation as it exists today can give a true conception of the farmers' business organizations. The above statistics, while impressive, do not tell the whole story. Behind the current picture is the idea of a democratically controlled self-help institution as well as a pattern of cooperative evolution which has shaped present activities and which may be expected to influence the future.

In each of the commodity fields and in each of the business service enterprises where farmers' cooperatives are operating, there have been a number of distinct developments which have gained momentum in recent years. Over the field as a whole, these developments mark a rapid expansion

into new kinds of cooperative business on the one hand and a development of new ways of conducting business on the other hand.

Among the new kinds of cooperative enterprises, the cooperative cotton gins head the list. About 300, or more than half the total, have been organized in the past 6 or 7 years, and there has been no let-up in the rate of organization or the growth of individual units in the past year. Another recent expansion in the South is in cooperative cottonseed-oil milling. One of the newest associations is owned and operated by a federation of 32 cooperative gins. This association began crushing cottonseed about a year ago.

Frozen food locker plants represent another distinct development in which farmers' cooperatives have participated to no small degree. While a few of our present locker plants antedate the first World War, the 4,000 odd modern-type locker plants which dot the United States today are almost entirely a product of the last 5 or 6 years. Of these, about 300 are farmer-owned and controlled.

From the standpoint of rapid expansion, cooperative purchasing of farm supplies also shares the limelight. More than a thousand such associations have been organized during the past 10 years and a large majority of the 2,600 now in operation have been organized during the last two decades. Within the past year or two, the purchasing groups have continued their advance into new types of business—an advance which has carried them further toward the original source of supply through their manufacturing of fertilizer, feed, and other supplies and the refining and blending of petroleum products.

Aside from the new types of business there has been during the past year, a distinct trend on the part of cooperatives toward expanding their existing business from purely marketing or purchasing to include additional phases of both. This trend toward the undertaking of more functions has permitted increased savings to members and has worked to assure satisfactory quality of products handled.

Two relatively new developments in marketing farm products have had a pronounced effect on cooperatives: (1) The auction method of selling and (2) the increased use of motor trucks.

Cooperative auctions have gained favor as the auction method of selling continues to grow throughout the United States. The first cooperative egg auction was organized in New Jersey in 1930. Now there are 29 of these country-point egg and poultry auctions operating in 11 States, all but two of which are producer-owned and controlled. Country fruit and vegetable auctions date back to 1902 in Ohio, but most of the 68 now operating are of fairly recent origin and are concentrated for the most part in the five seaboard States from New Jersey to North Carolina. Almost half of these auctions are cooperative. Interest in wool auctions is developing in a number of western States. Live-stock auctions are found in all livestock areas, but are most numerous in the Corn Belt.

Of all the modern-day developments which have affected agriculture, perhaps none has caused as many cooperative readjustments as has the growth and expansion of commercial trucking. This has been particularly true for many of the cooperatives handling livestock, dairy products, grain, and fruits and vegetables. The term "truck problem" has become commonplace in discussions of marketing. There has been a tendency of late for cooperatives to meet the problem head-on by recognizing the commercial truckers as a new and distinct type

of customer requiring certain services which the co-operatives in many States can adjust themselves to provide.

The past 10 or 15 years in agricultural cooperation has been a period of consolidating gains. Co-operative leaders have turned their attention more and more toward bringing about improvements in the operation of existing cooperatives in order to put them on a more permanent foundation and in a position to do a better job for their farmer-members. Much less emphasis than formerly has been placed upon the formation of new associations and the advancing of price through monopoly control. This no doubt has been a sound procedure. In the past, many cooperatives were formed by farmers because the margins taken by private handlers were excessively large. For example, the early successes of the cooperative grain elevators and, more recently, of the cooperative petroleum associations were due in large part to the wide operating margins that prevailed in these fields before the cooperatives were formed. Generally speaking, the margins now have been reduced to a point where they approximate actual handling expenses under present conditions, and the cooperatives realize that if other substantial reduction is to be made it must come as a result of increased efficiency in operation through improved handling methods, by the use of more modern equipment, or as a result of consolidation or reorganization of the present marketing machinery.

W. W. FETROW.

AGRICULTURE. American agriculture, nearing the close of 1941 with the biggest volume of food in the nation's history, shouldered new responsibilities consequent to entry of the United States into World War II. Food in abundance for the United States and its allies, food in increasing volume of shipment overseas, had become a major need for victory. The new goals for 1942, revised in view of Pearl Harbor, according to Secretary of Agriculture C. R. Wickard, called for the greatest production in the history of American agriculture and for putting every acre of land, every hour of labor, and all farm machinery, fertilizer, and other supplies to the use which would best serve the wartime needs of the nation. Supporting the Food-for-Freedom campaign were the continuing Governmental efforts at soil conservation, economic security for low-income farmers, commodity loans to support prices near parity levels, farm credit on production and on mortgage debt, insurance of crops against natural hazards, purchase and distribution of foods to improve the nutrition and health of low-income people, and marketing of products under agreement between producers and processors. These forces were supplemented and strengthened by the research of the State experiment stations and Bureaus of the U.S. Department of Agriculture and extension service activities. (See AGRICULTURE, U. S. DEPARTMENT OF.)

Farmers in 1941 had the best cash income in years, the total from marketing and Government payments being 11.8 billion v. 9.1 billion in 1940. Production of many agricultural products was the largest on record—acres and yields of many important food and feed crops were larger than in 1940, although cotton made a comparatively small crop. Aggregate supplies of food were the largest in history, and the supply of feed grains was the biggest in 20 years. Food consumption—total and per capita—was the largest on record. Prices received by farmers in 1941 averaged 22 per cent above 1940, advancing in response to record con-

sumer buying power, increased commodity loans, and Government buying for domestic consumption and lend-lease export. Significant trends included a substantial improvement in the farm real estate market, with a movement toward fewer and bigger farms, further decline in the volume of farm mortgage debt and reduction in foreclosure sales, plentiful credit on good terms, a moderate decline in farm population, prospective tax increases, higher costs for farm machinery, shortages of building materials and supplies, and wages to farm hands the highest in years. Exports of farm products had fallen to the lowest level in 74 years, but gradually increased since April, when a large part of the Lend-Lease appropriation was earmarked for agricultural commodities. Competing imports exceeded the exports in value and complementary imports remained about the same size. Further details on these and other major factors and problems of agriculture are set forth in the following paragraphs.

See also the articles on the countries under *Production* and States under *Agriculture*, leading crops, as CORN, COTTON, TOBACCO, WHEAT, AGRICULTURAL COOPERATION, AGRICULTURE, U. S. DEPARTMENT OF, BUSINESS REVIEW under *Commodity Prices*, DAIRYING, ENTOMOLOGY, ECONOMIC, HORTICULTURE, LIVESTOCK, MARKETING under *Haw Materials*, NATIONAL INCOME; POULTRY, TRADE, FOREIGN, UNITED STATES under *Legislation*.

Agricultural Situation. Farm Income. The cash farm income for 1941 was estimated by the U.S. Department of Agriculture at about \$11,771,000,000 (1940, \$9,097,000,000), which comprised \$11,185,000,000 (1940, \$8,331,000,000) from marketings and commodities under loan and \$586,000,000 (1940, \$766,000,000) government payments. Total was about 500 million dollars more than in 1929 and nearly 954 million above the average for the period 1924-29. A gross farm income of about \$14,000,000,000 (1940, \$11,014,000,000) was indicated when the farm value of products retained for home consumption, \$1,600,000,000 (1940, \$1,229,000,000), and rental value of home were considered. Cash income from all crops, \$4,794,000,000 (1940, \$3,510,000,000), included grains \$1,334,000,000 (1940, \$1,007,000,000), cotton and cottonseed \$1,007,000,000 (1940, \$646,000,000), tobacco \$325,000,000 (1940, \$241,000,000), vegetables \$752,000,000 (1940, \$630,000,000), and fruits and nuts \$607,000,000 (1940, \$445,000,000), and from all livestock and livestock products \$6,391,000,000 (1940, \$4,822,000,000), including meat animals \$3,335,000,000 (1940, \$2,390,000,000), dairy products \$1,860,000,000 (1940, \$1,527,000,000), poultry and eggs \$1,012,000,000 (1940, \$754,000,000), and wool \$143,000,000 (1940, \$110,000,000).

Cotton and cottonseed yielded farmers over \$1 billion, the first time since 1929. A marked increase in the size of the 1941 wheat crop, together with substantially higher prices, resulted in the largest income from wheat since 1929. Income from most other farm crops, particularly truck crops, soybeans, rice, and several of the fruit crops showed substantial increases in 1941 over 1940. Returns from livestock and livestock products were about 25 per cent larger than in 1940, and the largest since 1929. Income from meat animals recorded the largest percentage increase over 1940, but the increase from poultry and eggs was nearly as large. Income from dairy products also was substantially larger than in 1940, the total exceeding the 1929 figure of \$1,800,000,000.

Farm Real Estate and Tenure. The national average of farm real estate values per acre during the year

ended Mar. 1, 1941, rose one point, reaching an index of average values per acre of 86 per cent of the 1912-14 level, compared with 85 in 1940, 84 in 1939, and 85 in 1937 and 1938, and about 18 per cent above the 1933 low of 73. The continuous cautious response of farm real estate values to improved price and income levels might be attributed to such considerations as number of farms available for sale in many areas and uncertain price outlook for some of the major agricultural products. Largest gains in real estate values since 1933 were made in the East South Central, South Atlantic, and East North Central States. The smallest rises from the depression low were in the West North Central States where the index of value was 67 versus 64 in 1933 and in New England States where the index was 107 versus 104 in 1934 and 1935.

Tabulations on farm land and people on the land, as reported in 1941 by the U.S. Bureau of Census from the 1940 census, totaled number of farms 6,096,799 (1935, 6,812,350, 1930, 6,288,648); land in farms 1,060,852,374 acres (1935, 1,054,515,111; 1930, 986,771,016 acres); average size of farms 174 acres (1935, 154.8, 1930, 156.9 acres); farm population 30,475,206 (1930, 30,445,350); total value of farm land and buildings \$33,642,000,000 (1930, \$47,880,000,000); full owners 3,084,138 (1935, 3,210,224; 1930, 2,911,644); part owners 615,039 (1935, 688,867; 1930, 656,750); tenants 2,361,271 (1935, 2,865,155; 1930, 2,664,365), and sharecroppers 541,291 (1935, 716,256; 1930, 776,278). The percentage of tenancy rose from 25.6 in 1880 to 42.4 in 1930, declining to 38.7 per cent in 1940. Of the total number of farms in 1940, 23.5 per cent were without milk cows in 1939, 38.2 per cent without hogs and pigs, and 15.2 per cent were without poultry.

Land values and mortgage debts followed farm prices up in the inflation period. After prices came down, reported the U.S. Department of Agriculture, these debts remained and were a heavy burden on farmers for years thereafter. The rapid advance of farm returns per acre up to 1919 was followed by a slower advance in farm taxes and interest per acre and in farm mortgage debts. After prices turned down, taxes and interest and mortgage debt continued to mount. In 1925, debt per acre was nearly three times the pre-war debt, and taxes and interest were 2.5 times pre-war. In the meantime, farm returns and farm values were following a downward trend and were running around only 1.25 times pre-war. All through the 1920's taxes, interest, and mortgage debt were more than twice as heavy a burden, compared to farm returns, as in the pre-war period. During the 1920's hundreds of thousands of farmers lost their farms through foreclosure and thousands of country banks failed. Debts and civic improvements which appeared easy to pay for in the flush of wartime inflation proved to be a long and bitter burden. Not until the great depression of the 1930's and the efforts by local, State, and Federal Governments to lighten taxes on farmers and to refinance or readjust farm debts did the tax and debt burden on farmers begin to be reduced. Even so, it still remained in 1941 relatively far heavier than before World War I.

Prices. Local market prices received by farmers for agricultural commodities sold during 1941 averaged 122 per cent of the 1909-14 (pre-war) average, compared with 98 in 1940, and the 1941 level was the highest since 1930 when the index was 126. Prices of farm commodities had regained most of the losses sustained during the last decade, although still not up to the level maintained in the late

1920's. The all-commodity index reached its lowest point in 1941 at 103 in February and March; thereafter it rose steadily to 139 in September and October. A loss of five points in November was more than recovered in December when the index reached 143, highest since January, 1930. Improvement in prices was general for all commodity groups. Most groups experienced a wide range of prices, the widest being 70 points in cotton and cottonseed and the smallest range 29 points for fruit. The low points were in the first 3 months, and the high points largely in the last 3 months of 1941. With production heavy in 1941, supplies of agricultural commodities were abundant and demand, both for domestic consumption and for export, continued strong enough to support prices higher than in other years of large supply.

Average prices received by producers Dec. 15, 1941, based on reports to the U.S. Department of Agriculture, with preliminary seasonal average prices for crops in parentheses, were estimated for wheat \$1.022 (95.6¢) per bu., corn 66.9¢ (70.9), oats 45.2¢ (38.7), barley 56.1¢ (49.4), rye 57.8¢ (53.1), flaxseed \$1.78 (\$1.725), soybeans \$1.47 (\$1.472), rice (rough) \$1.439 (\$1.185), potatoes 82.7¢ (69.5), sweet potatoes 86.6¢ (92.6), apples \$1.09 (90.3¢) per bu., tobacco 26.2¢ (25.7) per lb., peanuts 4.79¢ (4.58), cotton 16.23¢ (16.10¢) per lb., and cottonseed \$44.65 (\$48.04), and hay \$9.43 (\$9.01) per ton. Beef cattle sold for \$9.38 per 100 lb., hogs for \$10.21, veal calves \$11.22, lambs \$9.86, and sheep \$5.15. Eggs brought 34.1 cents per doz., butter 33.9 cents per lb., and whole milk wholesaled at \$2.66 per 100 lb. Wool brought 37.1 cents per lb. and live chickens 15.8 cents. Milk cows sold for \$79.70 each, horses \$67, and mules \$86.90. The corn-hog ratio (number of bu. equal in value to 100 lb. of hogs) was 15.3 versus 10.3 in December, 1940, and 11.9 the 1909-13 average. The ratio of prices received to prices paid by farmers rose from 82 in December, 1940, to 100 in December, 1941.

Foreign Trade in Farm Products. Exports of agricultural products from the United States, exclusive of forest products, fell in value to \$349,873,000 during 1940-41, about 53 per cent below the total of \$737,640,000 during 1939-40. Farm exports were the lowest in 69 years, i.e., since 1871-72, representing only 9 per cent of all exports, and for only the second time on record were exceeded in volume by imports of farm products similar to those grown in the United States. The ratio of imports to exports in 1940-41 was 179 as compared with an average of 69 for the 10 preceding years, which, moreover, was due almost entirely to decline in exports, for the volume of imports was approximately the same in 1940-41 as in the past decade. According to indexes of quantity, all major groups of these exports, except dairy products, were lower for 1940-41 than for 1939-40. Cotton exports, which accounted for over 70 per cent of the decline, were \$67,567,000, 81 per cent below 1939-40; fruits, fruit preparations, and juices \$27,715,000, -59 per cent; tobacco \$39,090,000, -40 per cent; grain and grain products \$65,675,000, -21 per cent; feeds and fodders \$1,676,000, -83 per cent; pork and lard \$23,650,000, -35 per cent; dairy products \$31,777,000, a gain of 282 per cent; and other farm products \$92,723,000, a decrease of 23 per cent. The operation of the Lease-Lend program, which began in April and gained momentum in succeeding months, brought exports out of the severe decline that held from September, 1940, through January, 1941. In each of those months the export rate was about \$240,000,000 per year, but in June the rate rose to

\$740,000,000, comparable with the 10-year average. The gain, however, based mainly on government expenditures, did not represent a normal resumption of commercial trade. The rising trend continued into the first quarter of 1941-42 (July-September), which closed with exports of farm products 136 per cent higher in value than a year earlier.

Farm products imported into the United States during 1940-41 were valued at \$1,475,357,000, an advance of 19 per cent from 1939-40, which totaled \$1,239,444,000 and compared with \$1,536,695,000 in 1936-37, and \$614,000,000 in 1932-33, the low point of the depression. Supplementary (competitive) agricultural imports in 1940-41 totaled about \$627,955,000, 10 per cent more than in 1939-40. The import situation was dominated by wool imports, valued at \$117,565,000, 21 per cent over 1939-40, to meet current consumption needs and to build up reserve supplies. Increases were shown by other commodities in this group, e.g., hides and skins valued at \$58,453,000 in 1940-41, +20 per cent; nuts and preparations \$15,351,000, +10 per cent; cotton and linters \$14,239,000, +38 per cent; and molasses \$17,818,000, +67 per cent. Imports of sugar, tobacco, cattle, and feeds and fodders did not change much from 1939-40. Decreases were registered by several important commodities, as vegetable oils \$44,092,000, -26 per cent, as well as by flaxseed -46 per cent, cheese -66 per cent, and canned beef -23 per cent. Complementary agricultural imports, made up largely (about 95 per cent) of rubber, coffee, raw silk, wool for carpets, bananas, cacao beans, tea, and spices, during 1940-41 were 27 per cent above the 1939-40 level, the principal increases being in rubber, coffee, and cacao. Agricultural imports made up about 52.5 per cent of all imports, \$627,955,000 being supplementary items and \$847,402,000 noncompetitive. Imports during the first quarter of 1941-42 were at levels far above that quarter of 1940-41. The total increase of \$80,000,000 in all agricultural imports could be accounted for almost entirely by very large increases in value of rubber and wool imports and in imports of hides, molasses, cotton, bristles, and tea. To offset these were the steep declines in imports of silk and of coffee in this quarter. Foreign trade in farm products was discussed in detail in the *Report of the Secretary of Agriculture for 1941* (pp. 11-22, 29-31, 37-54) and in *Foreign Crops and Markets 43* (1941), pp. 362-406 (Sept. 30, 1941), pp. 792-816 (Dec. 20, 1941) (both U.S. Dept. Agr.).

Population. People living on farms in the United States on Jan. 1, 1941, according to U.S. Department of Agriculture estimates, totaled 29,860,000, a decrease from 30,071,000 a year ago, attributable to a greater migration from farms than to farms. While the decrease was general in all parts of the country, the West South Central States, particularly Oklahoma and Texas, reported the largest loss, and the West North Central States also sustained a substantial decline. Tabulation released in 1941 from the 1940 census placed the total farm population at 30,475,206 on Apr. 1, 1940, virtually no change from 30,445,350 in 1930 but definitely below the 31,614,269 in 1920. Several sections, notably the Pacific Coast and certain Western States, showed some gains, while the largest decreases were in the Plains States of the central West. Declines in farm population in States hard hit by drought reflected the harsh conditions which led to some consolidation of farms and to some actual abandonment. Increase in part-time farming was indicated by the increase of people living on farms near factory towns and

large cities. That there were fewer children and more old people on farms than in 1930 was significant.

Crop Production. Conditions for crop production during 1941 were unusually favorable; a primary factor was above-normal rainfall in the western half of the country where low rainfall had limited crop production during much of the 1930-39 period. Yields per acre, the U.S. Department of Agriculture reported, were the highest on record, averaging 2 per cent above yields made in 1940 and 21 per cent above the 1923-32 (predrought) average. Yields were at least fairly good in nearly all parts of the United States except in the western Gulf Coast region, in South Carolina, and in some smaller scattered areas. Wheat seemed to be the only important crop to set a new high record of yield, while rice was about the only one to show below-average yield per acre. The 1941 acre yields of corn, tobacco, potatoes, sugar beets, beans, and soybeans were exceeded only once or twice in the last 70 years, and yields of oats, barley, grain sorghums, rye, buckwheat, flaxseed, cotton, hay, and peanuts were at high levels attained only in unusually favorable seasons.

While the acreage planted or used for the 46 principal field crops was about the same as in 1940, the area lost in 1941 from crop failure was the lowest in more than a decade. About 337,798,000 acres were left for harvest, 1 per cent more than the 334,171,000 acres harvested in 1940, but still 7 per cent under the peak of 364 million acres harvested in 1932 which included 24 million more acres of corn and 14 million more of cotton than in 1941. In spite of the smaller acreage in corn and cotton, the exceptionally high level of yields per acre in 1941 resulted in a near-record volume of crop production, about 11 per cent above the 1923-32 level. Aggregate production in 1940 was 8 per cent above the 1923-32 level and in the highest year (1937) was 12.6 per cent above.

The 1941 harvest included small crops of cotton and tobacco, and slightly below average crops of potatoes and sweet potatoes, but large production of nearly all other groups. Total grain production was larger than in other seasons since 1920. New high production records were established for hay and forage as a group, for fruits, and for vegetables other than potatoes and sweet potatoes. Individual crops which surpassed previous production totals include barley, grain sorghums, sweet sorghum for forage, beans, soybeans, oranges, peas, sweet corn, and tomatoes (the 3 principal vegetables grown for canning), carrots, celery, and a few other vegetables for fresh market. The corn crop was the largest since 1932 and the wheat crop the largest since the bumper crop of 1919. Rice production approached within 1 or 2 per cent of the record crop. The flaxseed crop was the largest since 1902 and the second largest on record. Although the peanut crop was smaller than in 1940, it was larger than the crops of other years. The acreages and production of farm crops in the United States, as estimated by the U.S. Department of Agriculture, and yields for cereals in foreign countries, as reported by the International Institute of Agriculture and other agencies are shown in the accompanying crop tables (pp. 13-14) and in the articles on individual crops; as, CORN, WHEAT, ETC.

Experiment Stations and Extension. Contributing to the steadily increasing efficiency of agricultural production, the experiment stations and extension services, centered as a rule at the agricultural colleges, were meeting the challenge of defense needs and adjusting their well-developed programs to

PRODUCTION REPORTED BY COUNTRIES IN 1940 AND 1941 OF WHEAT, RYE, OATS, BARLEY, AND MAIZE (CORN) IN BUSHELS *
(International Institute of Agriculture and U.S. Department of Agriculture)

Country	Wheat		Rye		Oats		Barley		Maize (Corn)	
	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940
United States	945,937,000	812,374,000	45,191,000	41,149,000	1,176,107,000	1,246,050,000	358,709,000	310,108,000	2,672,541,000	2,460,624,000
Canada	302,626,000	551,390,000	13,167,000	13,994,000	375,431,000	404,309,000	117,619,000	104,256,000	6,956,000	6,956,000
Mexico	13,828,000	13,337,000							66,158,000	66,158,000
Argentina	299,458,000	119,453,000	8,354,000	13,582,000	37,168,000	60,117,000	36,238,000	39,090,000	403,048,000	408,442,000
Chile	28,898,000	31,558,000						3,361,000		
Uruguay	7,058,000	9,901,000			1,240,000	2,697,000	1,316,000	772,000		
Belgium	...	7,800,000								
Bulgaria		61,839,000		8,582,000		9,381,000		14,440,000		42,124,000
Denmark	7,018,000	6,955,000	11,928,000	10,714,000	50,637,000	62,448,000	42,530,000	53,524,000		
Estonia		2,792,000		7,519,000		10,196,000		3,812,000		
Finland	6,224,000	6,908,000	10,708,000	10,511,000	37,823,000	34,776,000	6,706,000	7,441,000		
France		187,975,000				284,215,000		48,680,000		17,701,000
Germany ^b		202,750,000		372,000,000		473,144,000		208,746,000		
Great Britain		61,565,000				78,350,000		37,053,000		
Greece	23,900,000	32,938,000		2,278,000		12,001,000		11,001,000		11,611,000
Hungary		75,966,000		28,507,000		29,921,000		31,854,000		116,688,000
Ireland ^c		11,685,000				50,694,000		6,487,000		
Italy	262,715,000	261,252,000		5,998,000		39,318,000		10,057,000		135,072,000
Latvia		7,774,000		16,916,000		33,402,000		10,207,000		
Lithuania		9,583,000				30,078,000		12,294,000		
Netherlands		15,304,000		23,760,000		30,950,000		6,706,000		
Norway		2,530,000		224,000		11,103,000		4,200,000		
Poland		83,407,000		300,382,000		198,415,000		67,977,000		
Portugal	14,882,000	9,920,000	2,500,000	6,200,000		1,860,000	1,500,000	1,202,000	14,763,000	14,900,000
Rumania	90,204,000	89,295,000		6,791,000		31,349,000		30,372,000		166,365,000
U.S.S.R.	1,500,000,000	1,500,000,000		787,000,000		1,170,505,000		376,619,000		106,900,000
Slovakia	11,591,000	11,233,000	7,420,000	7,862,000		14,363,000		13,956,000		2,108,000
Spain	108,944,000	79,412,000	11,692,000	13,821,000	38,925,000	32,685,000	12,118,000	13,956,000	27,749,000	29,202,000
Sweden	12,463,000	15,459,000	11,063,000	10,436,000	53,462,000	64,562,000	7,211,000	8,694,000		
Switzerland		6,063,000								
Yugoslavia		69,327,000		8,311,000		19,835,000		17,054,000		172,441,000
Turkey	128,602,000	150,831,000	16,928,000	19,015,000	13,779,000	16,328,000	87,265,000	103,370,000	29,920,000	29,841,000
British India	373,526,000	401,968,000								
China	720,000,000	700,000,000								
Korea (Chosen)		10,222,000								
Manchuria	29,800,000	27,558,000						57,785,000		121,056,000
Japan	53,800,000	66,134,000					75,803,000	77,498,000		
Syria and Lebanon	27,600,000	24,000,000						17,683,000		
Algeria	32,000,000	27,600,000			8,000,000	6,900,000	32,000,000	16,500,000		
Egypt	41,529,000	49,994,000					9,789,000	11,073,000		60,049,000
Morocco (Fr)		23,900,000								
Tunis	15,065,000	10,656,000					9,181,000	4,134,000		
Union of South Africa	16,163,000	15,310,000		743,000		7,354,000		943,000	74,129,000	85,861,000
Australia	82,639,000	210,277,000								
New Zealand	8,306,000	8,010,000			3,512,000	2,601,000	1,002,000	959,000		

* The production shown for countries in the Southern Hemisphere is for the crop years 1940-41 and 1939-40. Where no data are given statistics are not available. ^b Includes Austria. ^c Includes Northern Ireland.

ACREAGE AND PRODUCTION OF FARM CROPS IN THE UNITED STATES IN 1940 AND 1941

(Bushels except as otherwise indicated.)

Crop	Year	Acres Harvested	Acre Yield	Production
Corn	1941	86,089,000	31 0	2,672,541,000
	1940	86,738,000	28 4	2,460,624,000
Wheat	1941	55,831,000	16 9	945,937,000
	1940	52,980,000	15 3	812,374,000
Oats	1941	37,972,000	31 0	1,176,107,000
	1940	35,393,000	35 2	1,246,050,000
Barley	1941	14,049,000	25 5	358,709,000
	1940	13,496,000	23 0	310,108,000
Rye	1941	3,498,000	12 9	45,191,000
	1940	3,210,000	12 8	41,149,000
Buckwheat	1941	339,000	17 9	6,070,000
	1940	389,000	16 7	6,493,000
Flaxseed	1941	3,202,000	9 8	31,485,000
	1940	3,180,000	9 7	30,886,000
Rice	1941	1,245,000	43 4	54,028,000
	1940	1,089,000	50 9	54,433,000
Grain sorghum	1941	8,903,000	17 3	153,968,000
	1940	10,325,000	12 4	127,894,000
Cotton, lint	1941	22,376,000	235 4 ¹	10,976,000 ²
	1940	23,861,000	252 5 ¹	12,566,000 ²
Cottonseed	1941			4,892,000 ³
	1940			5,595,000 ³
Hay	1941	71,893,000	1 31 ⁴	94,107,000 ⁵
	1940	71,806,000	1 32 ⁴	94,541,000 ⁵
Sweet sorghum	1941	8,582,000	1 75 ⁴	15,040,000 ⁵
	1940	8,732,000	1 48 ⁴	12,955,000 ⁵
Beans, dry edible	1941	2,085,000	901 1	18,788,000 ⁶
	1940	1,094,000	890 1	16,943,000 ⁶
Peas, dry field	1941	284,000	22 2	6,315,000
	1940	240,000	14 3	3,439,000
Soybeans for beans	1941	5,855,000	18 2	106,712,000
	1940	4,779,000	16 2	77,374,000
Cowpeas for peas	1941	1,490,000	5 5	8,232,000
	1940	1,445,000	5 1	7,373,000
Peanuts	1941	1,964,000	79 ⁴ 1	1,558,085,000 ¹
	1940	2,040,000	85 ⁴ 1	1,749,705,000 ¹
Potatoes	1941	2,733,000	130 ⁴ 9	357,783,000
	1940	2,865,000	132 0	378,103,000
Sweet potatoes	1941	759,000	83 4	63,284,000
	1940	664,000	81 0	53,811,000
Tobacco	1941	1,350,000	948 1	1,279,872,000 ¹
	1940	1,408,000	1,034 1	1,455,802,000 ¹
Sugar beets	1941	757,000	13 3 ⁴	10,090,000 ⁵
	1940	916,000	13 4 ⁴	12,292,000 ⁵
Sugar cane	1941	296,000	18 9 ⁴	5,597,000 ⁵
	1940	270,000	15 6 ⁴	4,218,000 ⁵
Sugar cane for syrup	1941	113,000	162 6 ⁴	18,374,000 ⁵
	1940	102,000	131 5 ⁴	13,415,000 ⁵
Sorgo syrup	1941	190,000	61 3 ⁴	11,681,000 ⁵
	1940	197,000	57 2 ⁴	11,267,000 ⁵
Maple syrup	1941	10,240,000 ⁶		2,091,000 ⁵
	1940	10,288,000 ⁶		2,680,000 ⁵
Maple sugar	1941	10,240,000 ⁶	1 68 ⁷	489,000 ¹
	1940	10,288,000 ⁶	2 14 ⁷	550,000 ¹
Broom corn	1941	251,000	372 1	47,000 ¹
	1940	296,000	296 1	44,000 ¹
Hops	1941	35,000	1,160 1	40,380,000 ¹
	1940	33,000	1,282 1	42,066,000 ¹

¹ pounds ² bales ³ tons ⁴ 100-lb bags ⁵ gallons ⁶ trees tapped ⁷ total equivalent sugar per tree

cope with the urgent demands of actual war. Problems of agriculture, the rural home, and rural life were under intensive study at the State experiment stations of each State and territory in more than 8,370 active research projects. Financed from State and Federal funds, many of these projects were cooperative among groups of stations and with the U.S. Department of Agriculture and other agencies.

Noteworthy achievements in the research of the stations during 1941 included new and better varieties of field crops, vegetables, and fruits; improved strains of livestock and poultry, effective cultural and field practices and harvesting, storage, and handling methods insuring maximum crop yields and enhancing desirable market and technological qualities; better control methods aiding in the defeat of insects, plant diseases, and weeds; definition of soil types and their values for cropping; better methods of conserving soils and their fertility; appropriate fertilizer formulas and suitable place-

ments, and substitution of green manures for some of the costlier minerals and chemicals; the development and adaptation of mechanical farm equipment; greater efficiency in use of farm power and in use of electricity in farm operations and bringing modern facilities into farm homes; more efficient production structures and better farm homes; irrigation methods conducive to the best use of available water supplies; and profitable drainage practices. Home economics research resulted in more effective use of foods and higher dietary levels, benefiting national health and increased use of such commodities as vegetables, fruits, and dairy products. Benefits to both producer and user of textile fabrics came from studies of clothing fabrics. Studies of family income and consumption have had important bearings on agricultural planning.

Economic research was featured by great advances in agricultural planning—broadened to include economic and sociological as well as technical phases—involving results obtained in farm management, marketing costs, taxation and tenure, and new types of investigation on alternative uses of land, diet, and health of more families, and much short-term or service research. Farmers were also aided by other phases of economic and social research on population problems, rural education, transportation facilities, and the rural family and its consumption needs in terms of food, clothing, and shelter. Accomplishments in the numerous investigations were published in station bulletins and reports, and in many technical journals and trade papers. Findings having major significance in the solution of current problems and representative of the wide range of subjects under study were reviewed, along with pertinent statistical data, in *Report on the Agricultural Experiment Stations, 1941* (U.S. Dept. Agr.). The experiment stations received from Federal grants \$6,862,500 and from State and other supplementary sources \$15,571,050, making a total of \$22,433,550 available for their administration and research during the fiscal year 1941.

The work and accomplishments of nine special research laboratories, each dealing with a problem of significance in the region where located, established, 1935-39, under the provisions of Bankhead-Jones Act of June 29, 1935, and cooperative among Bureaus of the Department of Agriculture and the stations and supplementing their investigations, and progress made by four regional laboratories for research on new and extended uses for surplus farm commodities, were set forth in *Report of the Chief of the Office of Experiment Stations, 1941* (U.S. Dept. Agr.).

The Extension Service increasingly concentrated all resources on the call for all-out defense. County agents were in every county of agricultural importance, home demonstration agents in nearly two-thirds of the counties, and 1,650 State subject-matter specialists were available to advise the agents. More than 700,000 volunteer local leaders were organized and trained to help to plan and lead community activities. Extension home-food production committees were established early in the year, and in nearly every State an expanded coordinated food production and preservation program was launched, largely by placing major emphasis on defense, nutrition, and discussion phases of programs already established. Local mass educational programs for encouraging and helping farm people to produce the needed pork, dairy, and poultry products, tomatoes, and other foods were started. The service was making a major contribution in helping farm people meet urgent problems of defense and ad-

justments following such an emergency as they did in the first World War.

Extension agents assumed the lead in most communities in conferences between farmers and manufacturers, distributors, cooperative association leaders, and others to assure marketing distribution and processing facilities for increased production in each locality. Much of this and related food-for-defense information was carried to farm people through cooperative marketing and purchasing associations, including nearly a million farmer members, organized or assisted by extension agents during the year. Through 1,140,000 members of organized home demonstration clubs, food-for-defense and increased-home-food-production needs and practices reached farm women in every farm community. Home gardening, health and nutrition, and food production projects received major attention of the nearly 1,500,000 farm boys and girls in 4-H clubs.

Of the grand total of \$33,194,380 of funds allotted in 1940-41 for cooperative extension work in the United States and territories, \$18,590,925 came from Federal grants, \$6,707,118 from State and college funds, \$6,806,873 from county appropriations, and \$1,089,464 from farm organizations, etc.

The extension agents intensified and enlarged established programs in better nutrition, improved food habits, and production and preservation of food for home needs. The most fundamental work extension home demonstration agents did in developing better food habits was in training farm women to be local leaders. More than 110,000 farm women gave of their time and skill as local leaders in their communities in food and nutritional educational work. Through these and other extension local leaders, about 1,700,000 rural homes were led to adopt improved food and other home-making practices, which in turn led to better farm living and a stronger nation.

Major national contributions were made in organizing and providing facts for and otherwise assisting groups of farm people in systematic group discussions largely on the present national emergency, issues facing democracy, and possible steps to meet the situation. Educational efforts in behalf of conservation, long-time land use planning, more efficient farming, better marketing of farm products, low-cost home improvements, inexpensive clothing, and other farm and home problems were continued and related to present situations and defense needs. On the broad educational front, special assistance was given to Negro farmers by 504 Negro county and home demonstration agents, in addition to the work that white extension agents did with Negro farmers.

Extension agents cooperated with other governmental agencies in assisting farmers in defense acquisition areas to become relocated or to find other employment. Aid was rendered to farmers in such defense areas in organizing to provide Army cantonments with locally grown produce. Extension workers also devoted considerable time to explaining local application of provisions of the Agricultural Adjustment, Rural Electrification, Farm Credit, Surplus Marketing, and Farm Security Administrations; Soil Conservation Service; Tennessee Valley Authority; and other agencies and in helping farmers make best use of loans, conservation payments, and other services of these agencies in meeting local problems.

World Relations of American Agriculture. The situation of world agriculture in wartime had become clearer as the war in Europe entered its third year. Germany had extended her control from France to

the Central Ukraine, the U.S.S.R. was resisting German aggression, and the United States was throwing its full economic power into a national defense program and aid to Britain and her allies, a task that became more difficult with the United States at war. Current world trade in agricultural products, as viewed by the U.S. Department of Agriculture, bore little resemblance to the trade carried on before September, 1939. Food had become a critical need of every nation at war; and in none of the warring or occupied countries were supplies of food or other agricultural products kept at pre-war levels. On the other hand, many nations still at peace were faced with curtailed export markets and record surpluses of certain crops. In importing countries there had been a change from pre-war patterns of consumption—substitutions as well as actual curtailments; while in exporting countries, pressure of surpluses, together with new demands brought about by the war was causing a change in the patterns of production. An outstanding development, from the viewpoint of United States farmers, was the passage of the Lend-Lease Act, under which foods, munitions, and other supplies were made available to nations resisting aggression (refer above to *Foreign Trade in Farm Products*). The United States was seeking improved trade relations with the other American republics by cooperating in efforts to increase the output of agricultural products marketable in but non-competitive in the United States, and by participating in efforts to regulate trade in surplus and competitive crops. It also was providing technical and financial assistance to a number of countries in programs to raise living standards through increased production of subsistence crops and greater agricultural efficiency. These efforts were reviewed in *Agriculture in the Americas* (vol. 1, 1941), a monthly. Commodities receiving special attention included rubber, quinine, cocoa, coffee, tapioca, rotenone, fibers, fats and oils, and fruits.

American agriculture in its world trade relations was affected by many factors and activities in other countries and regions, including wartime policies, controls, and trade agreements affecting agricultural trade, and objectives and problems of price control; world war, hemisphere trade, and the American farmer; western hemisphere trade in cotton, and world cacao production and trade; agriculture's role in hemisphere defense; the Inter-American Coffee Agreement; agriculture in the São Paulo-Northern Paraná region; agriculture in the Argentine trade agreement; the agricultural economy of Colombia, Mexican vanilla production and trade; rationing and cotton control in the United Kingdom; food rationing in Germany; agriculture and food control in Switzerland; the Russo-German war and Soviet agriculture, and grain exports from the Soviet Union; agriculture and agricultural policies in British Malaya; regulation of rubber and tea; impact of war on the Japanese cotton-textile industry, the Japanese silk industry facing a new crisis, and Manchurian agriculture under Japanese control; agriculture in unoccupied China since 1937; agriculture in French West Africa; and wartime aspects of Egyptian agricultural economy. These and other factors of significance have been treated in *Foreign Agriculture* (vol. 5, 1941), *Foreign Crops and Markets* (vols. 42 and 43, 1941), and *Report of the Director of the Office of Foreign Agricultural Relations, 1941*. (All U.S. Dept. Agri.) See the respective countries under *Production*.

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HENRY M. STEECE

AGRICULTURE, U.S. Department of. As part of the national defense program the Department of Agriculture expanded some of its activities in 1941 and undertook many new ones. In fact, defense involved almost every detail of the Department's work. Some of the tasks were: (1) Assisting agriculture to provide adequate supplies of farm and forest products for domestic consumption and lend-lease exports; (2) aiding consumers to win better health through better nutrition, (3) collaborating with other Government agencies in providing critical and strategic raw materials, (4) developing substitutes for imports that the war reduces or cuts off, (5) finding new defense uses for farm and forest products; (6) assembling data useful in locating new defense industries, (7) dealing with price relationships in the defense economy, (8) aiding defense agencies in locating, acquiring, and servicing new military establishments, (9) assisting in plans for economic defense, and (10) promoting hemisphere solidarity.

Food-for-Freedom Campaign. In a "food-for-freedom" drive the Department announced a plan to support the prices of dairy products, hogs, chickens, and eggs up to June 30, 1943, and to cushion the possible shocks of the post-defense period. It sought to establish price-differentials that would favor the desired balance among dairy products. Later, on the authority of an amendment to an act that extended the life of the Commodity Credit Corporation, it undertook to support the prices of hogs, eggs, evaporated milk, dry skim milk, cheese, and chickens up to Dec. 31, 1942, at not less than 85 per cent of parity to the extent that the funds available allowed. In the fall the Department worked out goals for a record total output in 1942, got the help of State agencies in breaking down the goals to a State and county basis, and launched a farmer-pledge campaign. The goals took account of the expected demand at home and abroad, the need for machinery, fertilizer, insecticides, container materials, storage, and agricultural labor, the seasonal and biological problems involved in rapid crop expansion, the availability of necessary credit, the nutrition standards considered desirable for the United States, and the need to divert excess staple export acres to other uses.

Lend-Lease Buying. The agency responsible in the Department for carrying out the food buying part of the lend-lease program is the Surplus Marketing Administration. When the lend-lease bill was before Congress, the implications for agriculture had to be considered. It became apparent that quick action would be necessary to lay the groundwork for operations under the measure. Several problems stood out. It was recognized that each buying operation would need to be conducted with speed and efficiency, and with the least possible disturbance of normal marketing. How to carry on the purchasing of agricultural products so as to bring the greatest benefit to farmers was another problem. Also prominent was the fact that the anticipated export need for farm products would have to be taken care of in addition to rapidly increasing domestic demands. Since lend-lease money could not be made available in advance, the Surplus Marketing Administration made arrangements with the Commodity Credit Corporation for purchases of commodities needed under the lend-lease program. The Corporation allocated \$90,000,000 for the purchase of reserve supplies of lend-lease materials for which the Corporation was to be reimbursed from lend-lease funds collected in payment for goods turned over for export. This arrangement paved the way for a flexible buying program.

Promoting Better Nutrition. Better use of food for health calls for many-sided collaboration among the Department's specialists. It enlists especially the services of the Bureau of Home Economics, the Surplus Marketing Administration, and the Extension Service. Representatives of these agencies serve on planning committees of the national nutrition campaign. They help farm people to produce more meats, fruits, and vegetables for themselves. The Department's nutrition campaign deals with food requirements and uses, vitamin values, family spending, and the proper combination of foods in the diet. Getting national strength from food is a problem also in income distribution. Through relief distribution, the food stamp plan, school lunches, and low-cost milk programs, the Department brings food and needy people together.

The AAA's Wartime Job. The Agricultural Adjustment Administration's job increased in wartime. It is not, however, a different job. It is the old job, with simply a change of emphasis among the priorities and an increase in the size of the undertaking. As the Government agency that aids the farmers in cooperative crop adjustments, the AAA seeks to assist the farmers in producing more of what the country needs and less of what it does not need. Moreover, the commodity emphasis is not basically different from what it was before the war began. We still need more dairy and meat products in particular and less wheat, cotton, tobacco, and other surplus crops. Change of priority among AAA objectives results from the fact that the war situation almost automatically boosts the farm income, and at the same time creates urgent new needs for particular crops. The AAA's task is bigger because, in a changed crop balance, we need a record total farm production.

Besides machinery developed during eight years of crop adjustment experience, the AAA has new price incentives made available by Congress. In the basic crops, for example, there is a higher level of loan rates coupled with higher penalties for excess marketing. There is power here to encourage a switch from overproduced to underproduced lines. In nonbasic crops Congress has authorized purchasing for lend-lease export, price supports, offers of protection to farmers against sudden price changes

in the post-defense period, and other incentives to increased production. The existence of a well-defined ever-normal granary enables the AAA to assist farmers in getting feedstuffs for livestock, dairy, and poultry production. Shaping its programs to fit the needs of the emergency, the AAA works with farmers through the U.S.D.A. agricultural defense boards, the farmer committee system, and Federal and State field workers. Along with its established objectives, the AAA program takes on a new and broader national meaning in which the prevention of surpluses, the conservation of resources, the maintenance of the Ever-Normal Granary, and the support of farm prices and farm incomes become parts of the greater purpose of national defense.

Commodity Loan Facilities. Organized in the fall of 1933 the Commodity Credit Corporation was originally an independent agency, but is now part of the farm program machinery. Its total resources are two and three-quarter billion dollars. Its investment at the present time in loans and in commodities owned totals about one billion dollars. It has outstanding loans of nearly 400 million dollars in the hands of banks, cooperative associations, and other lending agencies. The remaining resources, when supplemented by loan repayments and proceeds from sales of owned commodities next season, should suffice to make necessary loans on the 1942 crops. Losses of the corporation have been small compared with the benefits it has realized for farmers, but the defense emergency emphasizes the importance of reducing the expense as much as possible through close coordination of the loan program with acreage adjustments and marketing controls.

Entomology in Defense Activities. In the Department of Agriculture the agency concerned with work on insects and plant pests is the Bureau of Entomology and Plant Quarantine. It has joined defense units and within the limit of its funds and authority is helping to meet the wide variety of needs associated with the defense program. See ENTOMOLOGY, ECONOMIC.

Coordination of Federal and State Research. Farm conditions are changing so rapidly that farm research must change too. The agricultural experiment stations in the several States and in Alaska, Hawaii, and Puerto Rico are alive to this fact. They are scrutinizing carefully their old and their new research projects, so as to give them maximum defense effectiveness. The emergency has necessitated some redirection of the work both as regards production needs and as regards adjustment to changed economic conditions. It appears on the whole, nevertheless, that the activities of the experiment stations, with some change of emphasis, fit in well with defense requirements. The Department's Office of Experiment Stations helps to coordinate the projects, under legislation which requires it to pass on proposed expenditures with Federal funds. See AGRICULTURE.

Agricultural Chemistry and Engineering. Chemists and engineers in the Bureau of Agricultural Chemistry and Engineering attack together a great variety of problems in farm production, in the protection of crops from pests, in transportation and storage, in processing, and in the utilization of crops by industry and by the individual consumer. The results have important defense applications. Four new regional laboratories recently built and equipped, together with the laboratories previously established at Washington and at the various field stations, help to solve many urgent problems, as well as to carry on long-time research projects.

Among the accomplishments of direct value in defense are contributions to the improvement of

camouflage materials and methods, demonstrations of the usefulness of certain agricultural materials for direct war purposes, such as the making of smokeless powder and protective helmets for civilian defense workers, improvements in equipment used by fighting forces, and foods better adapted for use under exacting conditions of transportation and storage, such, for example, as dehydrated vegetables. Other research results in this category contribute indirectly to defense. Examples of this type are new methods and equipment that make certain farm products sources of good substitutes for imported materials now not readily obtainable; improved ways of turning out food products useful in maintaining a high standard of nutrition; better storage methods and structures for food products, more economical production and processing of fibers; procedures that save fuel oil in house heating; more efficient processing of turpentine and rosin, possible new sources of vegetable oils, and ways of increasing commercial production of soybean protein as a substitute for other proteins.

Animal Industry Research. Research in the Bureau of Animal Industry continues to furnish growers with facts that enable them to produce more livestock at less cost and to overcome difficulties that formerly have caused loss and discouragement. There is space here for just one example. Investigations with phenothiazine for combating internal parasites of livestock came to fruition near the end of 1940. The research work showed conclusively that this chemical was effective, in small therapeutic doses, for removing injurious and devitalizing internal parasites from cattle, sheep, and goats. Among such parasites were stomach worms, hookworms, and nodular worms. The same chemical was found to be the most effective remedy yet discovered for the removal, from horses and mules, of red, or palisade, worms and related roundworms, which are as injurious to equines as hookworms are to human beings. The work of the Bureau's investigators has been confirmed by workers elsewhere in the United States and abroad with indications that phenothiazine will become the most valuable treatment yet known for the removal of internal parasites from domestic animals.

Developments in Plant Science. In work done in the Bureau of Plant Industry many superior new strains and varieties of crop plants emerged from test plots and began to be useful under commercial growing conditions. Certain developments in this field bore closely on the defense efforts. The program to grow rubber in the Western Hemisphere got off to a good start. The trend toward wider and more efficient use of grasses and legumes developed into a nationwide movement. Work to improve the nutrition quality of our food plants had increased importance. In the South especially efforts were made to develop a wider range of adapted varieties of vegetables. The Bankhead-Jones Vegetable Breeding Laboratory at Charleston, S.C., reported many valuable developments. Wise use of our water resources in the West, and the effect on the nation's agriculture of bringing in large areas of new irrigated farm lands, were plant-science problems with defense aspects.

Rural Electrification. During the fiscal year 1941 systems financed by the Rural Electrification Administration continued to advance the program of rural electrification as rapidly as permitted by the loan funds provided. On June 30, 1941, allotments totaled \$369,027,621. Full development of the systems for which these allotments have been made will provide electric services to approximately 1,171,867 rural consumers and serve a population

in excess of five and a half millions. At the close of the fiscal year 732 of the 823 borrowing organizations had energized part or all of their lines and were serving 780,933 farm families and other rural users. This is in contrast to a total of 549,604 rural users on the same date in 1940; 268,000 in 1939; and 104,528 in 1938.

The Farm Security Program. All regular phases of the Farm Security Administration program have been enlisted in the interests of national defense, and several new FSA activities have been undertaken as a result of the defense program. Families aided by the FSA rehabilitation program have increased their production of foodstuffs, especially their production of milk, eggs, and meat. Farm Security loans and supervision are currently serving to strengthen the morale and to improve the health and skill of more than 480,000 active standard borrowers. More than 900,000 borrowers have been assisted by the FSA since 1934. The progress of these economically distressed rural families toward recovery was revealed by a survey made at the end of the 1940 crop year. The average net annual income of borrower families had risen from \$480 in the year before they had FSA aid to \$650 in 1940, an increase of 35 per cent. Their average net worth had ascended 21 per cent—from \$871 to \$1,051. Thus was a total gain of \$75,289,838 in net income and of \$79,702,251 in net worth.

The Emergency Forest Problem. It should be frankly recognized that defense production, as we have conducted it up to the present, will further cripple our forest resources and plant seeds of rural problems. This is not only unfortunate, it is unnecessary. Relatively simple methods of forest cutting and other practices if applied on a nation-wide scale could give us what we need from the forests for defense programs and at the same time build up the forest resources. Studies made in the Forest Service indicate that an increased output of forest products can be obtained without excessively depleting our forest resources. It is possible, in other words, to get adequate supplies of forest products both for defense and for civilian use by methods which at the same time will strengthen our forest resources for the long pull. The Forest Service is cooperating with State agencies and with private forest operators to advance this dual aim.

Farm Credit Policy. The Farm Credit Administration is conducting a program to head off land boom dangers. It includes measures that will encourage farmers to build reserves for rainy days. The program emphasizes five primary credit objectives: (1) To make normal values a primary factor in all appraisals for farm real estate loans. This is the soundest basis of appraisal in a situation like the one now confronting us. (2) To impress upon present borrowers the wisdom of making use of higher incomes now available for the repayment of existing debts. This will be a factor in preventing inflation. (3) To encourage farmers to build reserves out of higher incomes today to bridge the period when incomes may not be so high, by offering inducements to borrowers to accumulate funds to meet future payments. (4) To avoid fostering speculative increases in production, while giving careful consideration to the needs for extending credit for making necessary shifts and increases in production. (5) To encourage the sound use of credit to foster a better balanced agriculture that yields a higher and a more secure standard of living to the family farm.

Soil Conservation. As an important part of the conservation program, the Department's Soil Conservation Service is classifying farm and range land so that eventually we will be able to ascertain

quickly the precise areas where, in case of emergency, we can expand or contract farm production most efficiently. As we learn the capabilities of our soil resources for varying uses, we can partially eliminate the chances for waste of manpower, fuel, seed, and equipment on inefficient areas. Similarly, we can diminish the likelihood of ill-advised, indiscriminate plow-ups such as took place during and after the last World War. The facts about America's land resources are being assembled by the Soil Conservation Service on "land use capability" maps. With one of these maps, a farmer can determine almost at a glance which areas are best for inter-filled crops, where his poorest acres are located, and which land is best suited for grass and trees.

Cooperative Land-Use Planning. Cooperative land use planning, or agricultural planning as it is now coming to be known, is a joint program of the Department of Agriculture and the State Land-Grant Colleges. It has spread in less than 3 years to 47 States and to nearly two-thirds of our agricultural counties. Designed as a democratic means of unifying national, regional, and local farm interests and of coordinating public agricultural program, agricultural planning has developed rapidly in the defense emergency. By democratic procedures, it promotes the full cooperation of farmers, agricultural experts, and administrators of farm programs in plans and policies to increase the contribution of agriculture to the defense of democracy, and to promote rural well-being. During the past year, State Agricultural Planning Committees have been active in 47 States, county and community agricultural planning committees have been at work in nearly 1,900 counties in these States. More than 10,000 community committees have participated in the program. The State and county committees include farm men and women and representatives of Federal and State agencies, while the community committees are composed primarily of farm men and women. See AGRICULTURE.

ARTHUR P. CHIEW

AIR BASES. See ALASKA, ANTIGUA, BAHAMAS, BERMUDA, BRAZIL, CANADA, COLOMBIA, COSTA RICA, CUBA, GREENLAND, ICELAND, IRAQ, JAMAICA, NEWFOUNDLAND, PANAMA, SYRIA, TRINIDAD, and URUGUAY, under *History*.

AIR BORNE INFANTRY BATTALION. See MILITARY PROGRESS.

AIR CONDITIONING. See HEATING AND VENTILATING.

AIR CORPS, AIR COUNCIL, AIR FORCE COMBAT COMMAND. See MILITARY PROGRESS. For the **AIR CORPS FERRYING COMMAND**, see also LEND-LEASE ADMINISTRATION.

AIRGRAPH SYSTEM. See PHOTOGRAPHY under *Military*.

AIRPLANES. See AERONAUTICS, WORLD WAR.

AIRPORTS. See AERONAUTICS, TELEGRAPHY.

AIR RAIDS. See AERONAUTICS, WORLD WAR; articles on the belligerent countries. For **AIR RAID PRECAUTIONS**, see BOMBS; CIVILIAN DEFENSE, OFFICE OF; FIRE PROTECTION; RAPID TRANSIT, RED CROSS, compare BLACKOUTS.

AIR TRANSPORT, AIRWAYS. See AERONAUTICS; DEFENSE TRANSPORTATION, OFFICE OF. For statistics, see countries and States under *Transportation*.

ALABAMA. An east south central State. Area: 51,609 sq. mi., including 531 sq. mi. of inland water, but excluding Gulf of Mexico coastal waters, 560 sq. mi. Population: (1940 census) 2,832,961. The urban population comprises 30.2 per cent of the total (U.S. average, 56.5 per cent); non-white pop-

ulation, 34.8 per cent (U.S. average, 10.2); elderly (65 years and over), 4.8 per cent. Alabama ranks 28th among the States in area, 17th in population, and 20th in density, with an average of 55.5 per sq. mi. The capital is Montgomery with 78,084 inhabitants; largest city, Birmingham, 267,583. There are 67 counties and 14 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to A. H. Collins, Superintendent of the Department of Education, there were 686,767 pupils enrolled in the public schools of Alabama during the school year 1940-41, 496,973 in elementary schools and 189,794 in secondary schools. Teachers numbered 19,393 and received an annual average salary of \$719. Total expenditures for the year were \$24,178,703. See UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 6,471, of which 6,271 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 347,123; 273,114 were private and commercial automobiles, 3,892 busses, and 62,847 trucks and tractor trucks. Gross motor-fuel consumption was 259,915,000 gallons. Net motor-fuel tax receipts were \$15,535,000, the rate being six cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$4,548,000.

Railways of all classes extended 5,052 miles (Dec. 31, 1939) 2.15 per cent of the total mileage in the United States. Class I steam railways (4,191 miles) reported 20,195,532 tons of revenue freight originating in Alabama in 1940 and 14,788,360 tons terminating in Alabama. There are 34 airports and landing fields in the State (14 lighted fields) and one seaplane anchorage. On July 1, 1941, according to the Civil Aeronautics Authority, there were 153 civil aircraft in the State and 935 commercial and private pilots (798 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 7,502,500, as compared with 7,791,500 acres in 1940. According to the latest census, there are 231,746 farms, valued at \$408,782,488, averaging 82.6 acres each. Farm population numbered 1,344,349 or 47.5 per cent of the total. Leading crops with production were: Cotton lint, \$64,780,000, 790,000 bales; corn, \$38,933,000, 51,228,000 bu.; cottonseed, \$16,579,000, 352,000 tons; peanuts, \$10,332,000, 252,000 lb.; hay, \$9,369,000, 3,643,000 tons; sweet potatoes, \$7,050,000, 3,240,000 bu.

Manufacturing. According to the latest census (1939) the total value of manufactured products was \$574,670,690. For details, see 1940 YEAR BOOK.

Mineral Production. Leading mineral products in 1940 included the following (with 1939 figures in parentheses): Pig iron, 3,476,072 net tons valued at \$49,706,851 (3,043,602 net tons, \$43,902,681); coal, 15,150,000 net tons (11,995,000 net tons, \$27,708,000); coke, 4,727,378 net tons, \$13,748,837 (3,854,505 net tons, \$10,917,559); iron ore, 7,330,412 gross tons, \$12,606,369 (5,985,208 net tons, \$9,971,024); cement, 5,249,759 barrels, \$7,617,405 (5,042,921 barrels, \$6,690,765). According to the U.S. Bureau of Mines, the total value of mineral production in 1939 was \$52,124,382 or 1.23 per cent of the total value for the United States. (Duplications are eliminated in State totals; e.g., iron ore is included, pig iron omitted.) Alabama ranks 20th among the States in value of mineral products.

Trade. According to the 1940 census there were 1,943 wholesale establishments in Alabama, employing 14,202 persons, reporting net sales for

1939 of \$415,688,000 and annual pay roll of \$18,910,000. There were 23,916 retail stores with 51,830 employees, reporting sales of \$435,973,000 and pay roll of \$37,826,000. Service establishments numbered 9,001, employing 17,977 persons for \$9,961,000 per year, and reporting a business volume amounting to \$31,361,000. The leading business center of the State is Birmingham which reported wholesale sales of \$182,932,000, retail sales of \$100,136,000, and \$7,610,000 receipts for its service establishments. Montgomery reported sales of \$56,851,000 wholesale and \$30,930,000 retail, Mobile, \$43,976,000 and \$30,838,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Alabama was \$37,596,000. Under the Social Security program, financed by Federal funds matching State grants, 20,068 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$9.14 (U.S. average pension, \$21.08); 16,815 dependent children in 5,801 families received average monthly payments of \$13.79 per family (U.S. average, \$32.73); and 615 blind persons received \$9.07 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 2,387 and received \$8.95 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 8,175 (\$542,000); NYA student work program, 3,529 (\$31,000), NYA out-of-school work program, 11,758 (\$221,000); WPA, 32,037 (\$1,535,000); other Federal emergency projects, 86 (\$12,000); regular Federal construction projects, 16,306 (\$2,191,000). The Farm Security Administration certified subsistence payments totaling \$656,000 for the month to 7,471 cases.

Legislature. The Legislature convenes quadrennially until 1943 when biennial sessions will be introduced. (The last session was in 1939.) It is composed of 35 Senators (34 Democrats and one vacancy in 1941) and 106 Representatives (101 Democrats and five vacancies).

Finances. Total tax collections in Alabama for the fiscal year ending in September, 1940, were \$55,134,000. Total sales taxes amounted to \$26,792,000, including general sales, \$7,756,000, motor fuel, \$15,301,000. Taxes on specific businesses and occupations ran to \$6,363,000, while general and selective property taxes came to \$5,103,000. The net income taxes were \$2,670,000. Cost payments for the operation of general government totaled \$44,469,000 in 1939, the latest year available. (Revenues for the general government for that year were \$65,781,000.) Cost of operation per capita was \$15.81. Total gross debt outstanding in 1941 was \$69,730,000 as compared with \$82,343,000 in 1932.

Officers and Judiciary. The Governor is Frank M. Dixon (Dem.), inaugurated in January, 1939, for a four-year term; Lieutenant Governor, Albert A. Carmichael, Secretary of State, John Brandon; Attorney General, Thomas S. Lawson; State Treasurer, Charles E. McCall; State Auditor, Howell Turner. Chief Justice of the Alabama Supreme Court is Lucien Gardner; there are five associate members elected by popular vote for six-year terms.

See BIRTH CONTROL; PRISONS.

ALAND ISLANDS. See FINLAND under *History*.

ALASKA. An organized, noncontiguous Territory of the United States, situated in the far northwest of

the North American continent, including the Aleutian Islands. Area, 586,400 square miles, inclusive of inland waters. Population, 1940 (taken Oct. 1, 1939) 72,524; 1930, 59,278. Whites (1939) numbered 39,170; Indians and Eskimos, 32,458. Capital, Juneau; population (1940) 5,729. Governor, Ernest Gruening.

These population figures do not tell the whole story, however, according to Governor Gruening's annual report for the fiscal year 1941. The large scale defense program in Alaska brought a sudden influx of workers to the territory, which continued to the end of the year and swelled the total population to 80,000 people.

Mineral Production. Plans for work in Alaska by the U.S. Geological Survey for 1941 included an intensive search for some of the strategic minerals urgently needed by the United States for the war program. Search for Alaskan sources of tin, nickel, chrome, mercury, tungsten, and antimony were pressed with especial activity.

The mineral output of Alaska was valued at \$28,470,000 in 1940 which compared with \$25,296,000 during the preceding year, and was greater than at any time since the first World War, according to the U.S. Geological Survey. The value of the gold produced in 1940 marked an all-time high. The following table shows the value of the mineral output of Alaska in 1940 and 1939:

Minerals	1940	1939
Gold	\$26,178,000	\$23,279,000
Silver	143,000	138,000
Copper	13,800	30,000
Lead	84,000	106,000
Platinum metals	1,093,000	997,000
Tin, metallic	52,000	37,300
Coal	695,000	585,000
Miscellaneous	211,200	123,700
Total	\$28,470,000	\$25,296,000

Fisheries and Furs. Products of the Alaska fisheries in 1940 decreased considerably, the total quantity being the smallest for any year since 1927. Two important causes of the decline were light runs of salmon and herring in certain localities, which necessitated rigid curtailment of operations, and suspension of operations by the Alaska whaling stations because of the low prices for whale oil. Halibut, clam, and shrimp products showed a gain both in quantity and value. Salmon products represented about 81 per cent in volume and about 91 per cent in value of the total fisheries output in Alaska in 1940, as compared with 73 per cent in volume and 91 per cent in value in 1939. In 1940, 25,199 persons were employed in the commercial fisheries of Alaska, a decrease of 5,373 from 1939. The total value of Alaska fishery products was \$36,440,660, a decrease of \$3,663,833 from the preceding year.

At the Pribilof Islands 65,263 fur-seal skins were taken. The computation of the fur-seal herd as of Aug. 10, 1940, showed a total of 2,185,136 animals of all classes, an increase of 164,362 over the previous year. Fur farming retained its place as an important industry, with 217 licensed farmers last year. The Territorial experimental fur farm at Petersburg became an important source of aid for the fur farmer. As in previous years, mink and blue and silver foxes were the main species propagated with the ranching of other fur bearers such as white fox, marten, land otter, beaver, and fitch being more or less in an experimental stage. The raising of marten and lynx was not entirely successful. Domestic production of muskrats and nutria is to be attempted.

Last year 546,295 pelts were taken in the Territory; the value of those shipped out totaled \$1,944,719. Muskrats, selling for an average price of \$1.10

per pelt, yielded a total of \$498,630; mink, \$371,467.

Commerce of Alaska. Shipment values (as compiled by the Collector of Customs) were:

	Years ended June 30,		Decrease
	1940	1941	
Alaska to United States			
Canned salmon	\$20,740,427	\$29,560,296	\$180,131
All other fish and fish products	5,626,421	4,890,638	735,783
Total fish	35,366,848	34,450,934	915,914
Furskins	2,844,202	2,565,414	278,848
Gold	20,951,797	20,410,755	541,042
Silver	79,075	65,749	13,326
All other products	4,003,969	3,661,022	342,947
Grand total	\$63,245,951	\$61,153,874	\$2,092,077
United States to Alaska	43,827,202	.....	.....

Agriculture and Colonization. Agricultural interests remained focused on the Matanuska Valley colonization project. About 4,500 acres of fir and spruce forest were turned into fields of thriving crops of wheat, barley, oats, peas and oats, hay, potatoes, and numerous vegetables. The dairy industry in the valley expanded greatly. There were 133 occupied and 8 unoccupied farms in the project. A number of the original 40-acre tracts were combined with others to make 80- or 120-acre farms. Additional land was cleared on the unoccupied tracts to make them more valuable for farming. There was sufficient farming experience in the Matanuska Valley to prove agriculture a distinct success.

Reindeer Service. Congress passed the Reindeer Act (1939) appropriating \$795,000 to buy up all nonnative owned reindeer as a conservation and Eskimo-protection measure. In 1941 there were approximately 205,000 reindeer in Alaska of which natives owned about 161,000 and the government 44,000. These animals graze 56 ranges on the west coast between Kodiak Island and the Arctic rim east of Barrow, an area of 166,000 square miles. There were 36 native reindeer associations in 1941, in which 3,190 Eskimos, Aleuts, and Indians owned stock. Over 14,000 people, including native families, were dependent upon reindeer as an essential source of food and clothing.

Transportation and Communications. Records of the five regular steamship companies serving Alaska disclosed a considerable increase in travel to Alaska over previous years. Both passenger traffic and freight tonnage over the Alaska Railroad showed a noteworthy increase for the year due to the defense construction activities in Anchorage and Fairbanks. In addition to the usual funds for the Alaska Road Commission, \$1,000,000 was made available by congressional appropriation for a road connecting the Anchorage road system with the Richardson Highway, thus connecting with the Fairbanks road system. Length of road to be built is 145 miles and estimated cost, \$1,500,000. Work was well started on the new road from Palmer to the Richardson Highway with construction under way in various stages over a distance of 40 miles. The cost during the year was \$991,967, of which \$276,294 was for new work and \$715,673 for maintenance and improvement. Total expenditures during the fiscal year were \$1,212,995.

Today there are 155 commercial air fields in Alaska. Work completed during the fiscal year 1941 by the Airways Engineering Division provided the Territory with an airways system from Nome to Ketchikan. Improvements during the fiscal year will expand the system to the Alaska Peninsula and the Aleutian Islands.

Education. The University of Alaska in 1940-41

enrolled 250 resident and 60 nonresident students. The Territorial Board of Education, during 1940-41, operated 116 day schools, 5 special schools, and 2 vocational boarding schools with a total enrollment of 6,900. Several factors have contributed to a steadily increasing enrollment in Native schools for the past six years.

Events. Headlines in the story of Alaska for 1941 were the vast naval and air base defense programs launched to strengthen the position of the United States in the Pacific, and the sudden strategic importance of Alaska to the United Nations with the entry of the United States into World War II. The Aleutian Islands are 800 miles nearer to Japan than Pearl Harbor; only 2,300 miles lie between Dutch Harbor and Yokohama. And it is no secret that Alaska's wealth of minerals and her annual output of 250,000 lbs. of canned salmon are prizes greatly coveted by Japan, to say nothing of the value a foothold on Alaskan soil would be for an offensive against the west coast.

Huge sums of money were appropriated and spent in 1941 to make Alaska impregnable. By June an initial \$70,000,000 had been authorized. The strong Naval air and submarine base at Dutch Harbor was commissioned Sept. 1, 1941. Huge inland Army air bases at Fairbanks and Anchorage were almost completed by the end of the year, the one at Anchorage with a 1,000-bomber capacity. The Navy put a listening post on Kiska in the Aleutians, and additional flying fields for the Army were well under way at Yakutat on the Gulf of Alaska and at Metlakatla. Still other naval bases were being built at Kodiak and Japonski Islands near Sitka. The airfield program included major airports on Annette Island near Ketchikan, at Boundary, Big Delta, West Ruby, Bethel, and Cordova.

A program of tax reform was presented by the governor to the legislature in January, 1941, which proposed levying two new basic taxes, a corporate and personal income tax and a general property tax, and the repeal of more than 30 existing so-called "nuisance" taxes. This proposal was designed to correlate the increased prosperity of individuals in Alaska with the revenues needed for the betterment of the Territory. But the old frontier psychology of "Get in, get rich, get out" prevailed, and the reforms were defeated by a small but active lobby representing the absentee gold-mining and cannery group. Also defeated were a bill to create a much-needed Department of Health, a bill to remedy the code for juvenile offenders, and a bill to appropriate \$386,500 for new construction for the University of Alaska. The legislature cut the appropriation for the care of crippled children from \$30,000 to \$25,000, and abolished the Alaska Planning Council, which was established in 1937, and had since brought to light important and pertinent facts about the absence of adequate taxation in the Territory.

One constructive piece of legislation was the establishment of a Territorial Department of Labor. Jokers were inserted in the hope that the bill would be so bad that the Governor would have to veto it. These included a 10-year residence requirement for every employee of the Department, a 35-year age qualification for the Commissioner of Labor, and a salary for the Commissioner 28 per cent lower than that of all other Territorial officials. Nevertheless the Department was organized in the hope that subsequent legislatures would do better by it.

See *ARCHAEOLOGY; GEOLOGICAL SURVEY; LABOR LEGISLATION.*

ALBANIA. A former Balkan kingdom on the east shore of the Adriatic Sea, occupied by Italian

troops on Apr. 7, 1939, and proclaimed an Italian protectorate the following day. Excluding the districts of Kossovo and Ciamuria in Yugoslavia, annexed to Albania in 1941, the area was 10,629 square miles and the estimated population 1,063,000 on Dec. 31, 1939 (1,003,124 at the 1930 census). Capital, Tirana (pop. 30,806 in 1930); other chief towns, Scutari (Shkoder), 29,209; Koritsa (Korce), 22,787; Elbasan, 13,796; Durazzo (Dures), the chief port, 8,739. Most of the cities of southern and central Albania were badly damaged during the Italo-Greek war of 1940-41.

Education and Religion. Primary education is nominally compulsory, but illiteracy remains high. In 1939 there were 663 state primary schools, with 56,936 pupils; 19 intermediate schools, with 6,235 pupils; and about 500 Albanian students in various foreign universities. The estimated religious division of the population was: Moslems, 685,280; Orthodox Christians, 210,313; Roman Catholics, 104,184.

Production. Albania's chief products are corn, tobacco, wool, timber, hides, dairy products, fish, olive oil, and petroleum (see 1939 *YEAR BOOK* for available production figures). The December, 1938, livestock census showed 391,175 cattle, 1,573,857 sheep, 932,333 goats, 54,426 horses, 44,579 asses, and 10,391 mules. Besides petroleum, with an output estimated at 1,659,000 bbl. in 1940, there are copper, chrome, and other mineral resources which Italy commenced to exploit in 1940 and 1941. Flour, olive oil, and cheese are the principal manufactures.

Foreign Trade. Imports in 1938 totaled 22,397,890 gold francs (1 franc equalled 6.25 Italian lire), of which 8,337,109 francs were from Italy, exports, 9,749,959 francs (6,665,257 to Italy). Wool, hides and furs, cheese, cattle, eggs, and timber are the chief exports.

Finance. Budget estimates for the fiscal year ended Mar. 31, 1940, balanced at 40,000,000 gold francs. The public debt in 1938 was 68,200,000 gold francs, outstanding from a series of loans extended by Italy in return for political and economic concessions (see 1938 *YEAR BOOK*, p. 27).

Transportation. The highway network extended 1,759 miles in 1940 (750 miles suitable for motor traffic), but this was badly disrupted by war in 1940-41. Italian air services connect Tirana and other Albanian cities with Rome and other points. Construction of a railway between Durazzo and Elbasan, the first line in Albania, was begun in May, 1940.

Government. King Zog I, proclaimed King of Albania by an independent National Assembly Sept. 1, 1928, was dethroned Apr. 12, 1939, by an Italian-controlled Constituent Assembly, which abrogated the existing constitution. An Italian-sponsored government then offered the Crown of Albania to King Victor Emmanuel of Italy. A personal union between the two kingdoms was thus effected Apr. 14, 1939. The following June 3 Victor Emmanuel issued a constitutional statute making the Albanian throne hereditary under his dynasty and vesting legislative, judicial, and executive powers in the King's hands. Legislative powers were delegated in part to an Albanian Fascist Corporative Council, based on a newly organized Albanian Fascist party, and executive and judicial powers to Albanian officials acting under Italian guidance. Albania remained the official language. A treaty signed the same date placed Albania's foreign relations in the hands of the Rome Government (see *YEAR BOOK* for 1939, p. 22).

History. The Italo-Greek war that began Oct. 28, 1940 (see *YEAR BOOK* for 1940, p. 19) continued

on Albanian soil until the second week of April, 1941. Then the success of the German attack upon Yugoslavia and Greece forced the withdrawal of the Greek armies. Yugoslav forces that attempted an invasion of Albania after the German attack upon Yugoslavia had made but slight progress when German victories ended this threat to the encircled Italian armies (see *WORLD WAR*). Nevertheless war-ravaged Albania continued to suffer from hunger, disease, and the underground struggle against the Italian overlords that followed the sanguinary Italo-Greek hostilities.

Albanian nationalists in the main supported the Greeks in their war with Italy, hoping that an Anglo-Greek victory would permit the reestablishment of an independent Albania. When the Greeks indicated their intention of retaining the Albanian territories conquered from Italy, Albanian patriarchy living in exile in Balkan capitals appealed to Prime Minister Churchill in mid-February for a declaration by the British Government in support of Albanian independence. London authorities issued no public statement on the issue but reportedly sought through diplomatic negotiation to restrain Greek territorial aspirations.

With the collapse of Yugoslavia and Greece, Italy extended Albania's frontiers to include the districts of Kossovo in Yugoslavia and Ciamuria (Tsamuria) in Greece. Both contained considerable Albanian populations. Beginning May 10, King Victor Emmanuel of Italy made his first visit to Albania since the Italian occupation. The King and Premier Shevket Verlaci of Albania had a narrow escape from the bullets of an assassin near Tirana on May 17. Vasil Laci Mihailov, said to be a native of Ciamuria, was hanged for the crime. The puppet government at Tirana announced on June 28 that Albania was at war with the Soviet Union. On July 31 it was officially announced in Rome that Albanian authorities had assumed control of the protectorate's affairs under a special agreement with Italy, the terms of which were not reported.

Unrest and anti-Italian sentiment remained rife, however, and beginning in August Albanian tribes were reported to have joined in the anti-Axis revolt sweeping through the occupied countries of Europe. Assisted by Serbian Chetniks, Albanian guerrillas harassed Italian garrisons in the mountains of central and northern Albania. Widespread sabotage of the oil pipeline, mines, and equipment valuable to the Italians was reported.

Resignation of Premier Shevket Verlaci's Cabinet in favor of a new Ministry headed by Mustapha Merlika Kruja was announced in Tirana and Rome December 3. A pro-Italian, Kruja supported the Italian invasion of Albania and was subsequently appointed a Senator.

See GREECE, and ITALY under *History*; *WORLD WAR*.

ALBERTA. A prairie province of Canada. Area, 255,285 square miles, including 6,485 square miles of fresh water. Population (1941 census, preliminary), 788,398, compared with (1936 census), 772,782. Chief cities (1941 census figures): Edmonton, capital (92,404), Calgary (87,264), Lethbridge (14,238), Medicine Hat (10,473), Red Deer (2,846), Drumheller (2,687), Wetaskiwin (2,285). Vital statistics (1940): 17,329 living births, 6,198 deaths, and 8,778 marriages. Education (1938-39): 178,757 students enrolled in schools and colleges.

Production. The gross value of agricultural production for 1940 was \$203,721,000 (including field crops \$133,734,000, farm animals \$38,947,000, dairy products \$19,844,000, poultry products

\$5,385,000, fruits and vegetables \$3,750,000). Field crop yields in 1940 were wheat (187,000,000 bu.), oats (103,000,000 bu.), barley (32,000,000 bu.), rye (3,000,000 bu.), potatoes (93,100 tons), hay (899,000 tons), grain hay (1,800,000 tons), sugar beets (334,000 tons). Livestock (1940): 1,366,000 cattle (including 417,000 milk cows), 1,371,000 swine, 883,000 sheep, 658,000 horses, and 7,697,900 poultry. The 1940 wool clip amounted to 4,001,000 lb. Furs (1940-41): 2,601,424 pelts valued at \$2,806,073 (3,977,118 pelts, \$2,514,877 in 1939-40 and 2,273,826 pelts, \$1,345,129 in 1938-39). Forestry products (1939) were valued at \$3,268,000.

Mineral production (1939) was valued at \$30,691,617 (see *YEAR BOOK* for 1940, p. 20). In 1940, crude oil production amounted to 8,494,500 bbl.; natural gas, 22,736,000 M cu. ft., coal, 6,202,936 short tons. Manufacturing (1939): 961 factories, 12,712 employees, \$32,618,153 net value of products.

Government. Finance (year ended Mar. 31, 1940): \$24,410,040 for revenue and \$21,922,189 for expenditure; net funded debt, \$142,926,187. The executive power is vested nominally in the lieutenant governor but actually in the ministry, or cabinet, of the legislature. Legislative power is vested in the legislative assembly of 57 members elected by direct vote of the people (36 Social Credit, 19 Independent, and 2 other members were elected at the provincial general election of Mar. 21, 1940). Alberta is represented by 6 senators (appointed for life) and 17 elected commoners in the Federal parliament at Ottawa. Lieutenant Governor, J. C. Bowen (appointed Mar. 20, 1937); Premier, William Aberhart (Social Credit).

History. On Sept. 2, 1941, the provincial government defaulted on a \$2,250,000, 6 per cent bond issue, that fell due on September 1, but continued to offer to pay interest at one-half the coupon rate. A majority of the Supreme Court of Canada, on Dec. 2, 1941, decided that the Alberta Debt Adjustment Act of 1937 as amended in subsequent years is unconstitutional and beyond the powers of the legislature of the province. The Alberta government announced on Dec. 16, 1941, that it would enter the life insurance business on Jan. 2, 1942, under the terms of the Insurance Act as amended at the last session of the legislature. Four types of insurance will be offered—the 20-pay life, ordinary life, term insurance for 5 years, and insurance up to 65 years. Two years ago the province entered the fire insurance business. See CANADA.

ALCOHOL. See CHEMISTRY, INDUSTRIAL.

ALCOHOLIC BEVERAGES, ALCOHOL TAX UNIT. See LIQUOR PRODUCTION.

ALEXANDRETTA, Sanjak of. See SYRIA AND LEBANON.

ALFALFA. See HAY.

ALGERIA. A north African colony of France. Area, 851,350 square miles, of which all except 222,206 square miles are desert. Capital, Algiers (Alger). The estimated population (Dec. 31, 1938) was 7,490,000. At the 1936 census there were 7,234,684 inhabitants (6,592,033 in the Northern Territory and 642,651 in the Southern Territory), including 987,252 Europeans (853,209 French citizens) and 6,247,432 Moslem natives. On July 22, 1940, there were 20,000 Italians permanently established in Algeria. Chief cities (1936 populations): Algiers, 264,232; Oran, 200,671; Constantine, 113,777; Bona (Bône), 86,332; Philippeville, 66,112; Sidi-bel-Abbes, 54,754. Education (1938): For non-Moslem education, there were 21,249 pupils in 120 infant schools, 159,725 pupils in 1,224 primary

schools, 9,386 pupils in 30 higher primary schools, 14,306 pupils in 18 secondary schools, 484 students in 6 normal schools for teachers, and 2,248 students in the university at Algiers. For Moslem education, there were 77,022 students in 692 schools.

Production. The main occupations of the people are agriculture and stock raising. In 1939 yields of important cereal crops (in metric tons) were: Wheat 1,160,000, barley 1,100,000, oats 220,000. Other important products (1938 production figures in metric tons unless otherwise stated) were: Olive oil 7,000 in 1940-41, potatoes 145,300, tobacco 19,400, wool and mohair 7,400, wine 567,703,479 U.S. gal. Dates, figs, bananas, and almonds grow abundantly. Livestock (1938): 181,000 horses, 182,000 mules, 319,000 asses, 789,000 cattle, 5,965,000 sheep, 2,737,000 goats, 170,000 camels, and 60,000 swine. Mineral production (1938), in metric tons (figures are for metal content of ore): iron ore 1,640,000, lead 4,400, pyrites 44,000, zinc ore 7,000, antimony ore 150. The output of phosphate rock was 584,000 metric tons.

Foreign Trade. In 1938, imports totaled 4,995,000 francs; exports, 5,639,000 francs. Normally over 80 per cent of Algeria's trade was with France. See TRADE, FOREIGN.

Finance. Budget estimates (1940): Revenue, 2,526,128,968 francs; expenditure, 2,525,778,285 francs.

Transportation. In 1940 Algeria had about 2,734 miles of railway line in operation, 43,239 miles of roads (see ROADS AND STREETS), and air services connecting Algiers with other North African cities and with Marseille, France. Construction of a trans-Saharan railway linking the Algerian and Moroccan railway network with the Niger River in French West Africa was begun in 1941. In 1938 a total of 3,956 vessels discharged 3,925,179 tons of merchandise in Algerian ports and 4,540 ships of 7,920,844 tons cleared with 7,290,377 tons of Algerian produce.

Government. Administration is centralized in the hands of a Governor-General appointed by the French Government. Previous to the collapse of the French Republic, the departments of Algiers, Oran, and Constantine in Northern Algeria were represented in the French Parliament by 10 deputies and 3 senators. Southern Algeria had a French military government. Under the Vichy regime, full executive and legislative powers for the colony were vested in the Governor-General, who was made responsible to Gen. Maxime Weygand, Vichy's Delegate-General in French Africa. In July, 1941, General Weygand replaced Admiral Jean Marie Abrial as Governor-General of Algeria, at the same time retaining his post as Delegate-General.

History. Although Admiral Abrial in an interview on February 17, asserted that all factions in Algeria were solidly behind the Pétain Government in France, the colony was influenced by the tide of resistance to Vichy's policy of collaboration with Germany that swept France during 1941. In January six persons were killed in a riot of French troops stationed at Maison Carrée, Algeria. Executions or imprisonments of de Gaullist spies and conspirators were reported from time to time. A breach between General Weygand and the Vichy Vice Premier, Admiral Darlan, over the issue of collaboration with the Reich was reported and on August 27 the French War Minister shifted the command of French troops in Algeria. See FRANCE under *History*.

Charges were made in the United States (*Nation*, May 3, 1941) that thousands of Spanish and other

refugees were subjected to forced labor on the trans-Saharan railway project and to maltreatment by French officials. These charges were officially denied by the Governor-General's office in July.

In line with the Vichy Government's program in France, the Governor-General's office in Algiers proceeded with the reorganization of the colony on a corporative basis. A decree of Apr. 7, 1941, called for the creation of an Organization Committee for each branch of industrial or commercial activity. The Committees were to assume full control and direction of all persons and companies in their respective occupational groups and to regulate production, distribution of raw materials and stocks, working conditions, etc.

See FRANCE under *History*.

ALIENS, ALIEN REGISTRATION. See IMMIGRATION; also, ENEMY ALIENS, FEDERAL BUREAU OF INVESTIGATION. For alien assets in the United States, see FINANCIAL REVIEW. For the ALIEN ENEMY CONTROL UNIT and HEARING BOARDS, see ENEMY ALIENS.

ALL-AMERICAN CANAL. See AQUEDUCTS.

ALSACE-LORRAINE. The two border provinces annexed by Germany after the Franco-Prussian War and returned to France by the Versailles Treaty (June 29, 1919). They were reoccupied by German troops in June, 1940, and reincorporated in the Reich on or about Nov. 30, 1940. Area, 5,605 square miles; population (1936 census), 1,915,627. Lorraine was merged with the Saar district (Saarpfalz) to form the new German province of Westmark. See FRANCE under *History*.

ALUMINUM. Aluminum is essential in the production of war materials. It is needed for naval construction, for all aircraft construction, especially for fighter planes, because of its lightness, great strength and freedom from oxidation. It comprises half the weight of every airplane: at a rough estimate, 13,000 lb per fighter plane, 30,000 lb. to a bomber.

Aluminum was the first of the five critical materials to be put under priority control by the OPM (February, 1941). Government rationing began in April with A-preference ratings given to defense orders. The nondefense industry was warned as early as March by the Director of Priorities to seek substitute materials. By April almost the entire supply in the United States was going into military production. By mid-1942 aluminum demands are expected to double when more and more huge aircraft manufacturing plants swing into the projected 60,000-plane program. On Jan. 26, 1942, the entire supply of United States aluminum was requisitioned for war contracts only, and at once, by Conservation Order. This bans its use for any civilian purposes whatever.

The national defense program as early as 1940 had increased aluminum production in the United States 26 per cent over 1939. Imports of crude aluminum increased 26 per cent and exports fell 25 per cent. Production in 1941 increased 33 per cent over 1940 with 300,000 tons of aluminum plus 70,000 tons from secondary sources. The Aluminum Company of America did the whole production job until 1940 when four new companies came into the field. The price fell from 20¢ to 17¢ a lb. in 1940 and to 15¢ a lb., September, 1941, where it remained to the end of the year. Early 1942 will see the United States producing aluminum at the rate of more than 450,000 tons per year. With eventual war needs figured at 800,000 tons by the OPM, the nation's production goal is

725,000 tons by the end of 1942 and a 750,000 ton yearly rate by 1943. Canada sends the United States about 20,000 tons of aluminum every year but is expected to ship in 100,000 tons in 1942.

Production of bauxite in the United States, according to the U.S. Bureau of Mines, totaled about 899,500 long tons in 1941 compared with 438,913 in 1940. Of this Arkansas contributed 92 per cent; the other 8 per cent came from Alabama, Georgia, and Virginia. Consumption of bauxite broke every record with about 1,700,000 tons against 1,072,000 tons in 1940. Of this, 70 per cent went to the aluminum industry, 16 per cent and 12 per cent to the chemical and abrasive industries respectively.

The U.S. Bureau of Mines estimated that the United States had about 32,511,360 tons of bauxite in reserve, not counting the wealth of bauxite at Surinam (Dutch Guiana), where the United States established a military outpost, Nov. 24, 1941, to protect that invaluable and indispensable supply. Bauxite imports went up 75 per cent, January-September, 1941, according to the Bureau of the Census. Of these, 85 per cent were from Surinam; 10 per cent from British Guiana and 5 per cent from the Netherlands Indies. No foreign trade statistics later than September, 1941, will be published until after the war.

To prevent United States dependence on other countries for aluminum, however, the U.S. Bureau of Mines and Geological Survey began investigations for new sources of supply and reported that aluminum can be gotten from deposits in the United States of alunite, kaolinite clay, shale, nepheline syonite, feldspar mica, Wyomingite, prophanite, kyanite, and also from coal ash in minute quantities.

See CHEMISTRY, INDUSTRIAL under *Metals*; ELECTRICAL INDUSTRIES; MINES, BUREAU OF; PRODUCTION MANAGEMENT, OFFICE OF.

AMBASSADORS AND MINISTERS. See DIPLOMATIC CORPS.

AMERICAN COMMUNIST PARTY. See COMMUNISM.

AMERICAN FEDERATION OF LABOR. See LABOR CONDITIONS under *Union Movements*; NATIONAL LABOR RELATIONS BOARD.

AMERICAN LABOR PARTY. See COMMUNISM.

AMERICAN LEGION, The. An organization of World War veterans chartered by Congress in 1919. Its 23d national convention was held in Milwaukee, Wis., Sept. 15 to 18, 1941. Color was supplied the convention by a 12-hour parade, Tuesday, September 16, by 80,000 marchers before 1,000,000 spectators. The next convention will be in New Orleans, La., Sept. 21 to 25, 1942.

The convention defined the national objective in these words: "Our present national objective is the defeat of Hitler and what he stands for, and all diverting controversies should be subordinated to the main objective. We appeal for unity on this national objective." The convention also resolved: "We have confidence in and pledge our support to our Government, our President, our War Department, and our Navy Department."

It called for: (1) Repeal of the neutrality act. (2) Removal of geographic limitation on the movement of American troops. (3) Indorsement of the foreign policy of the President and the Congress. (4) Upholding the traditional policy of freedom of the seas, and opposition to any appeasement toward the aggressor nations, Germany, Italy, and Japan.

National Defense. The Milwaukee convention defined the basic elements of national defense to be:

(a) The ability to apply any fraction or all of our manpower and war industrial resources promptly and efficiently—by universal military training and federal regulation of war supply agencies. (b) The ability to carry war, when unavoidable, to our enemy, and thus prevent him from bringing war to us.

The national executive committee in Indianapolis, Nov. 6 and 7, 1941, recommended a five-point program for eliminating waste and confusion, increasing efficiency and accelerating the attainment of present national defense objectives, as follows: (1) Immediate creation of a national defense agency by the government, similar to the war industries board of the Great War, to be given full authority and responsibility for attaining the national defense objectives. (2) Placing into immediate effect of a temporary, equitable plan to utilize the manpower of the country in national defense. (3) Outlawing strikes in defense industry and making it a criminal offense in any way to obstruct defense production. (4) Drafting defense industry if selfish advantage is placed above the welfare of the nation. (5) Immediate stabilization of prices, wages, and rent.

Major Legislative Program. The committee designated the major national legislative program for 1942 as (1) The national defense program in full, as adopted at the Milwaukee national convention; (2) Those bills pertaining to the disabled veterans and to widows and orphans of the World War which have passed the House of Representatives and now are pending before the Senate finance committee.

Defense Accomplishments. During 1941 The American Legion with its 11,780 posts and more than 1,105,000 members, practically went on a complete war basis to throw the full weight of its manpower, prestige, and influence into America's all-out national defense effort. All its other activities were coordinated with this main program. Accomplishments included: Registration of 900,000 Legionnaires for national defense service; support of all defense legislation, including lend-lease bill and amendment of Selective Service Act to reduce age bracket; supplying innumerable leaders to defense posts of all kinds, ranging from President's cabinet down to local councils of defense and draft boards; establishing division of defense at national headquarters; sending a Legion mission at its own expense to Great Britain to study civilian defense functions in modern warfare; publishing first civilian defense handbooks outlining air raid warning and air raid precautionary services; enrolling and training tens of thousands of aerial observers; organizing thousands of air raid warning posts; enrolling and training thousands of air raid wardens; participating and scoring high in air raid warning tests conducted by the Army; sponsoring blackout tests in cities and towns; conducting large scale recruiting for the Navy; enrolling flying cadets for the Army and Navy; aiding in the organization of local "volunteer offices" everywhere to coordinate community resources for defense under the Office of Civilian Defense; suggesting the national aluminum collection and vigorously participating in it; investing post, department, and national funds in defense bonds, and supporting bond buying; cooperating in the United Service Organization fund campaign; establishing blood banks; organizing "ham" networks of amateur radio operators for emergency service; launching a nation-wide program of physical education under the direction of Frank G. McCormick, athletic director of the University of Minnesota, to toughen the national fiber for defense; cooperating with the Federal Bureau of Investigation against spies, saboteurs, and other dis-

loyal elements; enrolling in State guards; sponsoring model defense legislation in all States to curb any fifth column; extending its free rehabilitation services to all members of the present armed forces and their families in pressing any claims for compensation arising out of disabilities incurred in their present military or naval services; helping find employment for draftees who have returned from military service.

Americanism. In 1941 34 Boys' States were conducted in which 15,000 boys were trained in civic government, 400,000 boys under 17 again enrolled in junior baseball. Many thousands of students in 46 States participated in the annual high school oratorical contest; 13,055 medals were awarded by Legion posts and Auxiliary units to public school pupils outstanding in scholarship and leadership qualities; 3,483 copies of the suggested course of study on flag education were distributed, and 1,448,573 copies of the flag code. Nearly 3,000 Boy Scout troops were sponsored. A nation-wide effort was made to rid public schools of un-American textbooks.

Child Welfare. Thirty thousand volunteer workers carried on this activity. Incomplete reports showed the known total of \$6,279,470 was expended in emergency financial aid to 629,993 needy children during the year, mostly for food, clothing, and medical treatments. Physical fitness of American childhood was adopted as the 1942 national defense objective of this activity.

Rehabilitation. A total of \$2,603,747 in various contested government benefits was recovered without cost to the beneficiaries, by the Legion through its national rehabilitation service, for World War veterans and their dependents during the fiscal year ending June 30, 1941.

Membership. During 1941 the Legion reached a new high in membership. Dec. 31, 1941, there were 1,107,075 members. The posts numbered 11,790, also a new high. The Auxiliary also enrolled its highest membership, 523,328 in 9,351 units. The Sons of The American Legion closed the year with 53,892 members in 3,508 squadrons. The Forty and Eight membership climbed to a new peak with 45,139 members in 750 ventures. The Eight and Forty pushed to a new high enrollment of 7,810 members in 284 salons.

National officers elected for 1941-42 were: National Commander, Lynn U. Stambaugh; Vice Commanders, W. C. "Tom" Sawyer; DeLacey Allen; Charles E. Booth; V. M. Armstrong; and John F. Sullivan; National Chaplain, the Rev. Father Frederick J. Halloran, National Historian, Thomas M. Owen, Jr.; National Adjutant, Frank E. Samuel; National Treasurer, John R. Ruddick; National Judge Advocate, Ralph B. Gregg. National headquarters are at 777 North Meridian Street, Indianapolis, Ind. Legislative, rehabilitation, and employment director offices are maintained in the Legion-owned building at 1608 K Street, N.W., Washington, D.C. Editorial and advertising offices of *The American Legion Magazine* are at 1 Park Avenue, New York City. Editorial office of *The National Legionnaire* is at 777 North Meridian Street, Indianapolis, Ind.

LYNN U. STAMBAUGH.

AMERICAN LITERATURE. See LITERATURE, ENGLISH AND AMERICAN.

AMERICAN SAMOA. See under SAMOA.

AMERICAN SOCIALIST PARTY. See SOCIALISM.

AMERIPOL. See CHEMISTRY, INDUSTRIAL under *Rubber*.

AMMONIA. See CHEMISTRY, INDUSTRIAL.

ANDORRA. A small republic in the Pyrénées between France and Spain, under the joint suzerainty of the French chief executive and the Spanish Bishop of Urgel. Area, 191 square miles; population, 5,231. Capital town, Andorra. The language spoken is Catalan. Sheep rearing is the main occupation of the people. There is a governing body called the council-general consisting of 24 members (12 elected every 2 years) elected for 4 years by male citizens of 25 years of age or older. The council-general nominates the First Syndic (President) and Second Syndic (Vice-President). In a decree published Sept. 24, 1940, Marshal Henri Philippe Pétain, French Chief of State, assumed the title "co-prince of Andorra" formerly held by the President of the French Republic. In line with anti-democratic trends in France and Spain, universal suffrage was abolished in 1941 and electoral rights restricted to heads of families.

ANGLICAN COMMUNION. See ENGLAND, CHURCH OF.

ANGLO-EGYPTIAN SUDAN. A British-Egyptian condominium in northeast Africa. Area, 969,600 square miles; estimated population, 6,342,477 including 53,625 non-natives. Chief towns: Khartoum, the capital (46,676 inhabitants), Omdurman (110,959), Khartoum North (107,720), Atbara (19,757), Port Sudan (18,554), and El Obeid (17,300).

Production and Trade. Cotton (ginned) and gum arabic (80 per cent of world's supply) are the principal export products. The chief grain crops are great millet (the staple food of the Sudanese) and bulrush millet. Other products: sesamum, cottonseed, groundnuts, dates, doom-palm nuts, ivory, mahogany, ghee, shea nuts, salt, and gold. Live-stock (1938): 2,700,000 cattle, 2,500,000 sheep, 2,000,000 goats, 420,000 camels, 75,000 asses, and 23,000 horses. Trade (1940): £E3,695,776 (excluding government stores) for imports (cotton piece goods £E766,663, tea and coffee £E591,648); £E5,204,000 for exports (cotton accounted for £E2,690,000, gum arabic £E680,969). The £E (gyptian) averaged \$5.0130 for 1940.

Communications. At the end of 1940 there were 14,240 miles of roads, 1,991 route miles (3.5 ft. gauge) of railway, 2,325 route miles of river transport, 5,854 miles of telephone and telegraph routes, and 23 wireless stations. Shipping (1938): 746,591 tons entered and cleared Port Sudan.

Government. Finance. It was announced in August, 1941, that the financial returns for 1940-41 would show a surplus of £E29,461. Budget estimates (1941-42): £E4,066,172 for revenue and £E4,639,184 for expenditure. Some important features of the 1941-42 budget were the withdrawal of the Egyptian subsidy, and the extension of financial assistance by the British government for the expanded Sudan Defense Force. The governor-general is appointed by Egypt with the assent of Great Britain (Anglo-Egyptian Convention of 1899; reaffirmed by the Anglo-Egyptian Treaty of 1936). Ordinances, laws, and regulations are made by the governor-general in council. Governor-General, Lieut.-Gen. Sir Hubert Huddleston (appointed Oct. 16, 1940).

History. The first months of 1941 witnessed the elimination of the Italian threat to Khartoum and the cotton-growing district along the Upper Nile that developed with the capture of Kassala and other points in the Anglo-Egyptian Sudan in 1940 (see YEAR BOOK for 1940, p. 25-26). On January 9 the British began an offensive that led to the recapture of Kassala on January 18, the expulsion of Italian troops from the Sudan, and the subsequent invasion

and conquest of Italian East Africa (see *WORLD WAR; ITALIAN EAST AFRICA* under *History*).

An epidemic of yellow fever that claimed some thousands of victims in the Anglo-Egyptian Sudan during the year led British authorities throughout East Africa to take precautions against the further spread of the disease.

ANGOLA. A Portuguese colony in West Africa, south of the Belgian Congo. Area, 481,228 square miles; population (1936), 3,484,300, of whom 59,000 were Europeans and 21,800 were half-castes. Chief towns: Nova Lisboa (Huambo), Loanda, Benguela, Mossamedes, Lobita, and Malange.

Production and Trade. The chief crops (1938-39 production figures, in metric tons) were maize (316,800), sugar (38,200), coffee (17,600); (19,000 for 1939-40), wheat (6,400), palm oil (8,100, exported). Other crops included cacao, sisal, cotton, and tobacco. Mineral output (1940): 785,000 metric carats of diamonds and 25,000 metric tons of salt. There are deposits of copper and lignite. Trade (1938): 231,923,965 angolares for imports (textiles, foodstuffs, and coal were the main items); 338,541,274 angolares for exports (diamonds, maize, and coffee were the chief exports). The angolar averaged \$0.443 for 1938; \$0.0404, 1939; \$0.0371, 1940. Communications (1940): 2,080 route miles of railway, 22,990 miles of roads, 5,790 miles of telegraph lines, 259 miles of telephone lines, and 19 wireless stations.

Government. Budget (1940): 256,506,396 angolares. Public debt (June 30, 1937), 970,458,740 angolares. Angola is divided into 5 provinces and 14 administrative districts (decree of May, 1934). Governor General, Dr. Marques Mano (appointed Feb. 10, 1939).

ANGUILLA. See under *LEEWARD ISLANDS*.

ANHALT. See *GERMANY* under *Area and Population*.

ANHWEI. See *CHINA* under *Area and Population*.

ANIMALS, ANIMAL INDUSTRY. See *FISH and WILDLIFE SERVICE; LIVESTOCK; VETERINARY MEDICINE, ZOOLOGY.* For the **BUREAU OF ANIMAL INDUSTRY**, see *AGRICULTURE, U.S. DEPARTMENT OF.*

ANNAM. See *FRENCH INDO-CHINA*.

ANTHROPOLOGY. Disease, Prehistoric, in America. The subject of disease among the American Indians and Eskimo before the advent of the Spaniards and other Whites (1492—), and that of the African Negro (1510—), has in the course of time received much attention, without to this day being fully elucidated. There are three main sources of information in the line—first, the writings of the old Spanish padres, and later those of the English and French missionaries; second, the more exact observations and records of medical men who came into direct contact with the natives, and of special scientific observers; and third, the collections of prehistoric skeletal remains, some carrying marks of disease, accumulated in the course of time in various institutions.

The evidence thus gathered is of unequal value. The padres and missionaries, while not seldom among the best educated of their time, had but a limited or no real knowledge of many of the diseases, were handicapped by the false notions of their times, and were unable to differentiate between what had been native in these respects and what was introduced by the Whites or the Negro. The information gathered later by medical men and scientific observers was much more satisfactory in this regard, but these men came late, over three centuries after the discovery of America, when the natives were already much admixed and modified

in many particulars; as a rule they did not know the language of the people they were reporting upon, and often they had but a limited time for their observations. The skeletal materials, finally, until recently were insufficient in quantity, could only show diseases or injuries which affected the bone, and in many individual cases there could be no certainty as to whether or not a given skeleton was pre-White or later.

It is plain that all generalizations concerning the subject of disease in pre-Columbian America must suffer from these defects and can never be fully true and satisfactory. There are nevertheless individual pathological conditions on which so much evidence is already on hand that a serious error regarding them is improbable. They are the conditions that have left their indelible marks on the bones. The latest studies in this field are reported in "Diseases of and Artifacts on Skulls and Bones from Kodiak Island," Ales Hrdlička, *Smithson. Misc. Coll.*, 1941, vol. 101, No. 4, Publ. 3640, 14 pp., 11 pl.; "The Antiquity of Congenital Syphilis," R. C. Holcomb, *Bull. Hist. Med.*, 1941, X, No. 2, pp. 148-177.

The Primates. An event of outstanding importance of the current year, for all workers engaged in studies on the Primates, has been the publication, by the Yale Medical Library, of an exhaustive analytical Primate bibliography, *Bibliografia primatologica*, by T. C. Ruch, with 16 assistants, (1935-41). The exemplary volume contains 4,630 entries. Its scope may best be appreciated from the headings of its principal subdivisions: Works on Knowledge of the Primates in the Ancient World and Middle Ages; Anatomy and Morphology of the Primates; Physiology, including Reproduction and Development; Psychobiology; Phylogeny; Primates in Mythology, Legends, Arts; Conservation. The only part of the field that is not fully covered, though there are various references to it, is Primate Pathology. The volume will be exceedingly useful to both Anthropology and Biology, and its excellent make-up harmonizes with the contents.

Archeological Researches in the Soviet Republics. In harmony with its general scientific policies, the Soviet government is paying greater attention to archeological researches year by year. These are directed in part to what may be called the classical or early historic, but largely also to prehistoric archeology, and to the period of early man. Every summer scores of expeditions are sent out by such institutions as the Leningrad and Moscow Anthropological Museums, under the auspices of the Soviet National Academy of Sciences, to carry on careful excavations, some of which reach large dimensions.

So far these expeditions have been directed mainly to the southern European and Asiatic regions of the country, with parts of northwestern and southeastern Siberia, but as personnel and interests develop they are to be extended to all parts of the Soviet territory where remains of ancient man or of early civilizations may be expected.

One of the latest and most noteworthy explorations is being carried on at Samarkand, Uzbekistan, central Asia. In June a party of scientists working under the direction of the Uzbek branch of the Soviet Academy and the Alishir Nevayi Museum, opened the old tombs of Timur (Tamerlane), the great Mongol warrior and ruler (14th-15th century), of his grandson, Ulugh Beg, a famed astronomer, and of Kazy-Zade Rumi, a poet and scientist. The remains were found in fair condition and confirmed the historical accounts of the men as to their stature and other matters; the skull of Timur, how-

ever, had been somewhat damaged by water. The talented Russian restorer, M. Gerasimov, attended the work and will endeavor, on the basis of anthropometric measurements, morphological study, and the early accounts, to reproduce the features of the three men. The expedition also uncovered the Ulugh Beg astronomical observatory, which had been covered with dirt and sand by the Mohammedans on their advent to power.

On the eve of the Nazi invasion of the country, the Ukrainian branch of the Soviet Academy of Sciences was organizing 30 archeological parties which were to excavate in different parts of the republic, the majority had already begun their work when war began. The fate of these expeditions, and that of the scientifically highly valuable anthropological and archeological Kiev, Odessa, and Kharkov collections, is as yet unknown.

Alaska. The principal Russian libraries, particularly those in Leningrad and Moscow, are rich in as yet unpublished materials relating to the Russian expeditions to and colonies in America. Two such documents of outstanding value to American students of the Far Northwest have recently come to light in the Public Library of Leningrad. The first is the complete journal of Sven Vaxel, Captain of the Russian Navy, who accompanied Vitus Bering on the 1741-2 expedition which discovered Alaska and some of the Aleutian Islands. The manuscript has now been published. It gives many details on the fateful journey, including notes on the first contacts with the native Alaskans.

The second document, even more important for American-Siberian anthropology, is the journal of Dr. Merk, who accompanied the Billing's 1791-2 expedition to the Bering Sea and surrounding regions. This journal, which had been believed lost, is said to contain highly valuable data on the Chukchi, Eskimo, and other natives of the region covered by the expedition. It was to be published in the June or July number of *Sovietskaia Arktika*.

Trepanation, in America. The practice of trephining of skulls in life originated during neolithic times in the Old World, spread particularly over the central and western parts of Europe and over portions of northern Africa, and was evidently brought to America, by way of Asia, during the latter part of that period. In America, while distributed from Alaska deep into western South America, it remained rare over the northern part of the continent, but reached its greatest development as well as frequency in the Andean regions of Peru and in parts of Bolivia. It was everywhere pre-Columbian, but has persisted in isolated spots in the Andes and in the Sierras of northern Mexico to recent times.

The operation, large collections now show, was not in general of thaumaturgic nature as had been supposed, but surgical and curative, partly for wounds of the skull, partly in all probability for painful and other affections of the head and the brain. Subjects of both sexes, from mid-childhood to past middle age, though not in senility, were operated upon, as a rule successfully so far as the procedure was concerned, and in instances repeatedly. No part of the vault proper was excluded from the operation; its size in traumatic cases depended on that of the lesion; and when there was danger of brain hernia the operators used gourd, shell, or silver plaques, and possibly also animal bone, as stoppers.

The instruments with which the operation was performed were in the main stone knives and drills, though in the Andes bronze knives were also employed. The methods used for the operation were cutting, sawing, scraping, drilling, or a combination

of some of these. If cautery was used it was not for trepanation. The native medicine-men, who were the surgeons, must have been acquainted with some narcotics (datura, cocoa, and perhaps others) with which to make the operation bearable; and also, empirically, with some antiseptics, which prevented infection. They had developed effective bandaging, and their operations in nearly all cases resulted in excellent healing.

Large collections of old American trephined skulls are to be found especially in the Smithsonian Institution, in the Harvard Medical Museum, and in the American Museum of Natural History.

ALES HRDLIČKA.

ANTIGUA. An island presidency of the British Leeward Islands. Area, 171 square miles, including its dependent islands (Barbuda and Redonda, 63 sq. mi.). Total population (1939), 35,527. Capital: St. John, 10,000 inhabitants. The chief products are sugar and cotton. Trade (1939): £230,874 for imports and £220,460 for exports. Finance (1939): £127,327 for revenue and £152,311 for expenditure; public debt, £94,493. Antigua, in addition to representation in the federal legislative council of the Leeward Islands, has a local government consisting of an executive council (presided over by the governor) and a legislative council (3 official, 3 nominated, and 5 elected members) of which an administrator is president. Administrator, H. Boon (appointed Apr. 2, 1940).

History. On Dec. 20, 1940, the legislative council of Antigua approved the leasing to the United States for 99 years of sites for a seaplane base called for under the Anglo-American accord of Sept. 2, 1940, and delimited on Nov. 18, 1940 (see YEAR BOOK for 1940, p. 28). The formal treaty for the leasing of the base sites was signed in London Mar. 27, 1941, by the British and U.S. Governments (see GREAT BRITAIN under *History*). The sites consisted of (1) approximately 430 acres on Crabbs Peninsula in Parham Harbor and, in addition, Rat and Mouse Islands, and (2) approximately 1½ square miles of land along the shoreline of Judge's Bay. For text of treaty and lease, see *The Department of State Bulletin*, Mar. 29, 1941. Construction of the base, estimated to cost \$2,920,000, was carried forward during the year.

ANTIMONY. Antimony suddenly leaped in 1941 from the comparative obscurity of a "miscellaneous metal" to a place among the sinews of war. Its principal use is for hardening lead for bullets and battery plates and in the manufacture of babbitt metal for bearings. The first warning that the nation's supply might decrease came in 1939 with the outbreak of war in Europe, Germany's confiscation of the output of central and southern European countries, the continued decrease of deliveries from China resulting from Japanese occupation of eastern China, and an increasing demand for it in United States industry. United States consumption, normally about 10,000 tons per year until 1939, jumped to some 17,000 tons in 1940. It was listed among the strategic raw materials by the Army and Navy Munitions Board (1940) and soon afterwards the Reconstruction Finance Corporation was authorized to acquire reserve stocks of metallic antimony. By April, 1941, the Metals Reserve Co. had received 6,796 tons of Chinese antimony and 250 tons of domestic. Deliveries continued at the rate of 250 tons a month until the stockpile contracted for was completed. South China has been producing two thirds of the world's antimony, but the hazards of transportation via the Burma road kept

shipments to the United States at a minimum. Antimony ore imports in 1941 came principally from Bolivia and Mexico, which have doubled their production, 1936-41, and now produce almost four fifths of all antimony, which is about 32,000 metric tons (pure metal) per year. Total 1941 imports amounted to 14,645 short tons, as compared with 15,733 short tons in 1940. Mining experts of the U.S. Bureau of Mines discovered new deposits of antimony in 1941 which can become valuable in case of emergency. The price on domestic antimony remained at 14¢ a lb. (June, 1941), on Chinese antimony at 16½¢ a lb. (June, 1941). See GEOLOGICAL SURVEY; MINES, BUREAU OF.

ANTISEMITISM. See FASCISM; REFUGEES.

ANTISEPTIC CLOTHING. See CHEMISTRY, INDUSTRIAL under *Textiles*.

ANTI-TRUST LAW. See LABOR CONDITIONS under UNION MOVEMENTS; RADIO.

APPEASEMENT POLICIES. See UNITED STATES under *Foreign Affairs*; also BULGARIA, FRANCE, JAPAN, SWEDEN, THAILAND, UNION OF SOVIET SOCIALIST REPUBLICS, and YUGOSLAVIA under *History*.

APPROPRIATIONS. See UNITED STATES, foreign countries, and States.

AQUARIUM. See ZOOLOGY.

AQUEDUCTS. In the development of aqueducts for domestic or municipal water supply, a notable event of 1941 was the completion of the Colorado River aqueduct of the Metropolitan Water District of Southern California. (For this and the New York City project, see WATER WORKS.) To provide an adequate supply of water to the city and naval base at Key West, Florida, an 18-in. pipe-line 134 miles long is to be built, the pipe being carried from the mainland for nearly 100 miles along the Key West highway. Of the total cost of the pipe-line, the Florida Keys Aqueduct Commission will pay \$1,125,000, and the U.S. Navy Department will pay \$2,200,000.

At Boston, three shafts are to be sunk for the extension of the water-supply pressure tunnel from the Charles River to the existing Chestnut Hill reservoir. The river shaft will be 260 ft. deep, the intermediate shaft at Newton, 280 ft., and the shaft at the reservoir, 260 ft. At Toledo, Ohio, the new water supply from Lake Erie, eliminating a polluted supply from the Maumee River, was put in service December 1, 1941. It has a lake intake two miles from shore, two miles of 108-in. concrete pipe to a shore pumping station, nine miles of 78-in. steel pipe to a filter plant and high-service pumping station with a million-gallon elevated tank, thence seven miles of 72-, 60-, and 42-in. pipe to the city. At Muskegon Heights, Mich., a new intake line was built, 4,620 ft. long, consisting of 30-in. pipe laid in a trench dredged in the bed of Lake Michigan. Pipes 60 ft. long were welded into lengths of 120 ft., which were laid by a float- ing crane, the joints between the sections being made by divers.

A number of aqueducts and canals are included in the irrigation works of the U.S. Bureau of Reclamation. In April, work began on the 40-mile Madera canal from the Friant dam, in California, to the Chowchilla River. The Provo River irrigation project, in Utah, completed in July, includes a 47-mile aqueduct from the Deer Creek reservoir to Salt Lake City for a combined domestic and irrigation supply. On this line, two tunnels have been driven and a nine-mile section of pipe-line is under way.

The 70-mile All-American Canal for irrigation

in the rich Imperial Valley, California, was completed and opened for its entire length in June. It supersedes a smaller canal which had 60 miles of its length in Mexico. Water is taken from the Colorado River at the Imperial dam, and one of the four hydro-electric plants is already in operation. The upper end of the canal has a bottom width of 160 feet, with 21 feet of water; its last section has a 60-ft. bottom and 12-ft. depth of water. By April, 1942, the canal will be supplying all water for the Imperial Valley. A desilting plant at the dam will remove coarse silt, but so far it has not been needed. The fine silt in the water seals the canal from leakage where it is cut through a sand-hill region. A branch canal extends northwards through the Coachella Valley, and the two together will irrigate about a million acres.

An independent project is for a concrete-lined canal 170 miles long, from the Rio Grande at Zapata to Brownsville, Texas. It is to serve a district of 750,000 acres, partly under cultivation, but needing protection from droughts.

Pipe-lines for the transportation of oil by pumping, which may well be classed as aqueducts, became of special importance in 1941, owing largely to war conditions under which long-distance lines were projected to supplement ship and railroad carriage. In 1939 there were about 100,000 miles of pipe-lines. Construction reached 5,000 miles that year, and 6,500 miles in 1940, while 10,000 miles was predicted early in 1941. However, some of the larger projects had to be abandoned, owing to priority restrictions on the supply of steel.

Among the longest lines projected were the following: Texas to New York Harbor, 1,820 miles (24-in. oil pipe-line and 20-in. pipe for gasoline); Baton Rouge, La., to Greensboro, N.C., 1,260 miles; Port St. Joseph, Fla., to Chattanooga, Tenn., 450 miles, and from refineries at Marcus Hook, N.J., to Pittsburgh, Pa., 400 miles. Two important pipe-lines were built in 1941: (1) Portland, Maine, to Montreal, Canada, 240 miles of 12-in. pipe, with eight pumping stations. It was built in 132 days and pumping was started in November. It enables tankers from South American ports to discharge oil at Portland and avoid the long trip around by the St. Lawrence to Montreal. (2) Fall River, Mass., to Waltham, Mass., 60 miles, with a branch to Worcester. It consists of a line of 6-in. electrically welded pipe, with pumping at a pressure of 1,000 lb. per square inch. Tankers discharge to storage tanks at Fall River, and the oil is pumped to groups of refineries at the two inland cities. See illustrations facing page 70.

E. E. RUSSELL TRATMAN.

ARABIA. A large peninsula in southwestern Asia. Area, 1,000,000 square miles; population, said to be 10,000,000. For the various divisions of Arabia see below. Arab countries outside the Arabian peninsula are presented in the separate articles on EGYPT, IRAQ, PALESTINE, SYRIA AND LEBANON, and TRANS-JORDAN.

Aden. A British crown colony at the southern tip of Arabia, about 100 miles east of the Red Sea. Included in the colony is the island of Perim (5 sq. mi.; pop., 2,346) in the southern entrance to the Red Sea. Total area, 80 square miles; total population (1931), 48,338, excluding the military forces. Education (1939): 75 schools and about 4,000 students. Aden has a fortified naval base, a free port, and is a fueling station for ships. Early in 1940 the port was made a contraband control port for shipping. The transit trade is important. Local products are salt, soap, cigarettes, dhows, and cured fish.

Trade (1939): Rs68,566,887 for imports and Rs39,095,919 for exports (rupee averaged \$0.3328 for 1939; \$0.3016, 1940). During 1939 the merchant shipping that entered the port totaled 8,005,764 tons (net). Finance (1939-40): Rs2,722,901 for revenue and Rs1,964,583 for expenditure. Aden's government is administered by a governor, aided by an executive council of five members. Governor and Commander-in-Chief, Sir John Hathorn Hall (appointed Oct. 24, 1940).

Aden Protectorate. The region in southern Arabia extending east, north, and west of the colony of Aden. Area, 112,000 square miles; estimated population, 600,000, mostly Arabs. It is divided into two parts: (1) Western Aden Protectorate, comprising 19 sultanates of which the premier chief is the Sultan of Lahej. (2) Eastern Aden Protectorate, comprising the Hadhramaut (made up of the Qu'aiti State of Shihir and Mukalla, and the Kathiri State of Seiyun), the Mahri sultanate of Qishn and Socotra, the Wahidi sultanates of Bir'Ali and Bilihaf, and the sheikdoms of 'Irqa and Haura. The Sultan of Qishn and Socotra resides on the island of Socotra (1,400 sq. mi.; pop., 12,000), 150 miles from Cape Guardafui, Africa. Dates, gums, tobacco, and butter are the main products. There are large numbers of sheep, cattle, and goats. The local rulers have protective treaty relations with Great Britain and manage their own affairs subject to general supervision by British officials who are under the control of the governor of Aden.

Bahrain Islands. The chief islands of this state in the Persian Gulf are Bahrem, Muharraq, Nebi Saleh, and Sitra. Total area, 213 square miles, population, 120,000, of whom 75 per cent belong to the Shia sect, and the remainder to the Sunnis. Capital, Manama (25,000 inhabitants) on the island of Bahrem, is joined to the town of Muharraq (25,000 inhabitants) by a causeway. Chief products—pearls, crude oil (972,000 metric tons in 1940), boats, sailcloth, reed mats, and dates. Fine white donkeys are raised. Trade (1938-39): Rs27,326,230 for imports and Rs20,843,990 for exports (excluding oil). The rupee averaged \$0.3016 in 1940; \$0.3328, 1939, \$0.3659, 1938. Ruler, Sheik Sir Hamid bin Isa al Khalifa (in treaty relations with Great Britain).

Kuwait (Koweit). An Arab state south of Iraq. Area, 1,930 square miles; population, 50,000, exclusive of some Bedouins. Capital, Kuwait. Pearls, wool, dhows, and horses are exported. Trade (1937-38): imports Rs5,477,488; exports Rs2,320,075 (rupee averaged \$0.3659 for 1938; \$0.3733 for 1937). Oil was discovered during 1938. Kuwait is in treaty relations with Great Britain, which is represented by a political agent. Ruler, Sheik Sir Ahmed ibn Jabir al Subah.

Muscat and Oman. An independent sultanate in southeastern Arabia. Area, 82,000 square miles; estimated population, 500,000, mainly Arabs, but there is a strong infusion of Negro blood near the coast. Chief towns: Muscat, the capital, 4,200 inhabitants; Matrah, 8,500. On the northern coast of the Gulf of Oman is the port of Gwadar which is a possession of the sultanate. Chief products: dates, pomegranates, limes, and dried fish. Camels are raised by the inland tribes. Trade (1938-39): imports Rs4,876,193; exports Rs3,331,939. Muscat is the only port of call for steamers. Pack animals are used for inland transport. There is a motor road connecting Muscat and Matrah and extending to Kalba. Roads suitable for motor vehicles join Hagar, Boshier, and Qariyat with Matrah. A new treaty of friendship, commerce, and navigation was signed with Great Britain on Feb. 5, 1939. Sultan, Sir

Saiyid Said bin Taimur (succeeded Feb. 10, 1932).

Oman, Trucial. The Arab states (Abu Dhabi, Ajman, Debai, Shargah, Ras al Khaimah, and Umm ul Qawain) on the Persian Gulf. Area, 6,023 square miles; population, 75,000 to 85,000. Chief capital, Abu Dhabi. Pearls are the chief export from the coast ports. The rulers of the six states are in treaty relations with Great Britain, which is represented by a resident agent who is under the control of the British political resident at Bushire, Persia.

Qatar. An Arabian sheikdom occupying a peninsula in the Persian Gulf. Area, 8,500 square miles; population, 25,000. Capital, El Beda. Relations with Great Britain are regulated by the Treaty of Nov. 3, 1916. Sheik, Abdullah ibn Jasim al Thani (accessed in 1913).

Saudi Arabia. An Arab state occupying the northern and central part of Arabia, formerly known as the Kingdom of Hejaz and Nejd. Pending the introduction of a single constitution for the whole country, there are two systems of government—one for Nejd and one for Hejaz. Ruler, King Abdul Aziz ibn Abdur Rahman al Faisal al Saud.

Nejd includes the Nafud and Dahna deserts and has an area of some 800,000 square miles. Population (estimated), 3,000,000. Chief towns: Riyadh (capital), Hufuf, Mubarraz, Shaqra, Anarza, Buraida, Hail, Jauf, Sakaka, and Hauta. Chief products: dates, wheat, barley, fruit, hides, wool, clarified butter, Arab cloaks, and petroleum (5,365,000 bbl. in 1940). Large numbers of camels, horses, donkeys, and sheep are raised. Trade: imports include piece goods, sugar, coffee, tea, rice, and motor vehicles, exports, except for petroleum, are very small. Nejd is governed in a patriarchal manner by the King whose eldest son (Emir Saud), the heir apparent, acts as Viceroy and Commander-in-Chief of the military forces.

Hejaz extends along the western coast from Trans-Jordan to Asir. Area, 150,000 square miles; population (estimated), 1,500,000. Chief towns: Mecca, the capital and holy city of Islam, 80,000 inhabitants; Jidda, the seaport for Mecca, 30,000; Medina, the site of Mohammed's tomb, 20,000; Yenbo, the seaport for Medina. Chief products: dates, butter, honey, fruit, wool, and hides. The annual pilgrimage of Moslems from abroad to Mecca and Medina is the chief source of income. Hejaz is governed under the constitution of Aug. 26, 1926, and later amendments. There is a council of ministers presided over by the King's second son, Emir Faisal, who is minister of foreign affairs, and Viceroy during the King's absence.

Asir, a province south of the Hejaz, was incorporated in the kingdom of Saudi Arabia during 1933. Area, 14,000. Capital, Sabiya, 20,000 inhabitants.

Yemen. An independent Arab kingdom in southwestern Arabia. Area, 75,000 square miles; population, 3,500,000. Chief Towns: San'a (capital), 25,000 inhabitants, Hodeida, 40,000, Taizz, Ibb, Yerim, Dhamar, Mocha, Loheiya. Chief products: coffee, barley, wheat, millet, and hides. Ruler, Imam Yahya b. Muhammed b. Hamid el Din.

History. The British conquest of Italian East Africa early in 1941 and the subsequent Allied military occupations of Iraq, Syria, and Iran isolated the Arabian peninsula from the spreading European conflict and revived British prestige in that region.

The influential King Abdul Aziz ibn Saud of Saudi Arabia maintained a friendly attitude toward Great Britain, although he was understood to have pressed London to transfer the strategically important Red Sea port of Aquaba from Trans-Jordan to his domains. Ibn Saud in mid-May rejected appeals from Premier Rashid Ali al-Gailani of Iraq

for diplomatic or other support during the latter's short war with the British. According to the British, Ibn Saud denounced Rashid Ali's attack upon them as a violation of the Anglo-Iraq treaty of alliance. Following the statement by Foreign Secretary Anthony Eden that Britain would support the movement for Arab unity, the Saudi Arabian ruler was reported to have advised a meeting of tribal leaders at Taif in August that Arab interests demanded cooperation with Britain. He interned more than 1,000 Italian and German refugees from Italian East Africa, and refused to allow the noted German political expert, Dr. Fritz Grobba, to remain as Minister to Mecca.

ARCHAEOLOGY. In spite of the European War scholars were able to pursue their archaeological investigations in Central America during 1941 without interruption. At Kammal Juyu, the site of a considerable Mayan city near Guatemala City, Dr. A. Ledyard Smith of the Carnegie Institution discovered further proof that a group of narrow, enclosed courts are, as previously suspected, such as were used for handball. The evidence for this was the finding of two parrots' heads in stone which have been recognized elsewhere as typical of the ball courts of ancient cities in Central America.

Also in Guatemala in Nebaj, Quiche, Dr. Mary Butler uncovered two interesting urn burials. One produced 28 large-sized urns and jars along with 165 small vessels, mostly of excellent workmanship. The large vases usually contained bones while the others were closely grouped around, or over, an extended burial. The second find consisted of 22 urns and 77 small vases set in the stone wall which enclosed the dirt platform. The material recovered from these two diggings proved to be of the same type as the Quiche type of the middle group of Mayan pottery which runs in the order of monochrome, polychrome, and plumbate. In some instances was noted a relationship with the Chama-Chupal area to the east, while others betrayed connections with the Zacualpa region lying to the southeast.

At Tegucigalpa in Honduras, a half mile from the village of Corcuin, Province of Copan, a ruined Mayan city has been brought to light. Near Managua, in Nicaragua, F. E. Richardson, working for the Carnegie Institution, found in the lava made by the volcanic mud the imprints of the feet of two small people who seem to have been fleeing for safety to a nearby lake. Since this occurred at the time of an eruption which took place from two to five thousand years ago, these footprints are the earliest proofs we have of human beings in Central America.

At Cerro de las Mesas on the Rio Blanca in southern Vera Cruz, Mexico, a joint expedition of the Smithsonian Institute and the National Geographic Society sank deep trenches which have established the fact that the site began to be occupied a little after Tres Zapotes and continued to be inhabited up to a date much nearer historic times. Fifteen stelae and eight carved monuments were found at this place. One of these, four feet in height, is almost a replica of the Tuxtla statuette. More important than this however was the finding on the site of an offering of 782 jades.

See ANTHROPOLOGY; CHEMISTRY, PURE.

OLIVER SAMUEL TONKS.

ARCHERY. Outstanding champions of archery in 1941 were Miss Ree Dillinger of Summit, N.J., who shot a perfect score for her last end (six arrows) to take the national title by one lone point in the

tournament held at Portland, Ore., and Larry Hughes of Los Angeles, who replaced Russ Hoogerhyde in the men's competition.

Miss Ann Webber, winner of the Women's national crown in 1940, lost several times to Miss Dillinger, but did manage to defeat her opponent and win the metropolitan tournament by the margin of 1,419 points to 1,290. Bill Sterner of Mount Vernon, N.Y., captured the men's metropolitan.

ARCHITECTURE. War put a crimp in architecture on five of the six continents. Wholesale destruction in Russia included such famous structures as the industrial complex at Kharkov, in its way a sublime monument of early "hardboiled" functionalism, and the great dam at Dneprostoy. In England, a large building society with 300,000 mortgages spread everywhere had 7,000 of its houses slightly damaged, some 2,000 badly damaged but repairable, and 480 demolished, by the end of 1940. Within certain industrial areas, however, damage as reported in the Commons on May 29, ran as high as 20 per cent of all dwellings demolished and "all others damaged or liable to damage before winter." Among belligerents fully engaged a representative opinion was given in *Architects' Journal*, (London): "The severer the struggle, the longer the war, the more necessary is it to reconstruct as we go along. Otherwise there will come a point when we can go on no longer."

The United States went over from a prewar boom, which carried building to its highest since 1928, into rationing and virtual interdiction of purely private building ventures. (See CONSTRUCTION INDUSTRY). Only in South American countries such as Brazil were there building booms not directly related to war efforts.

Industrial Building. Industrial building in the United States reached the record level of \$1,181,513,000 in the 37 Eastern States, nearly double the high of 1920. The typical factory plan remained one embracing acres under one roof and the typical location close to existing centers at fringes of large towns. Some examples were set of dispersion in location if not in plan, e.g. the plant of North American Aviation, Inc., at Grand Prairie, Tex., first wholly new airplane factory completed. (J. Lloyd Allen, John R. Kelley). The main shop, covering 855,000 sq. ft., is windowless, with corrugated steel wall on a base of 5½ ft. concrete (against splinters); is air-conditioned, lighted wholly by 7,000 fluorescent bulbs, and—prodigal of metal—is roofed with corrugated-steel. Air defense is based on remoteness of location, on permanent windowless blackout, baffles before openings, lightness of construction to give way and localize damage, camouflaging of the flat roof (though subsidiary buildings have shapes harder to hide). All services, such as water, sewage, streets, had to be supplied to the town created by 11,000 new workers. It was here that Roscoe P. DeWitt, Richard J. Neutra, David R. Williams, devised quite attractive prefabricated housing which the winning crew in a race managed to erect in 57 min. 58 sec., complete to publicity lady in bathtub. As elsewhere, prefabrication was done by the contractor at the site, mainly on jig tables set up in three huge circus tents.

Other factories of architectural interest included: foundry for Aluminum Co. of America at New Vernon, Cal. (Gordon B. Kauffman); parabolic laminated-arch signal depot, Lexington, Ky. (Wilson, Bell & Watkins). A few factories were still given pseudo-monumental, pseudo-streamlined "styling," e.g., the aircraft building for the River Rouge Plant of Ford Motor Co., by Giffels & Vallet, Inc. and L.

Rossetti. Conscious design did, however, turn three buildings for Johnson & Johnson near New Brunswick, N.J. (R. G. & W. M. Cory) into a splendid enhancement of the highway (U.S. 1). Compare topics listed under INDUSTRIAL BUILDINGS.

Defense Housing. This was a field full of controversy and complex administration. Unhappily the agency with by far the most housing experience and local contacts had politically the lowest standing—The U.S. Housing Authority (q.v.); on the other hand, the Public Buildings Administration, well considered in Washington but entering a new field, had to learn through blunders. One of PBA's best architectural achievements was the 550-unit Puuloa Hall project for families of enlisted men on Oahu Island in Hawaii. PBA's largest was Linda Vista at San Diego (3,000 units), with an interesting mesa-top plan by S. E. Sanders (shelter design by C. D. Persina, planning coordination by G. S. Underwood). Outstanding "outpost" architecture, besides that on Hawaii, was done for the Army by Caribbean Architect-Engineer (Voorhees, Walker, Foley & Smith, architects, and Parsons, Klapp, Brinckerhoff & Douglas, engineers) at the base near Trinidad. Involving provision for a large population, military and civil, in the tropical zone, this problem was solved with grace and directness by studied use of native devices.

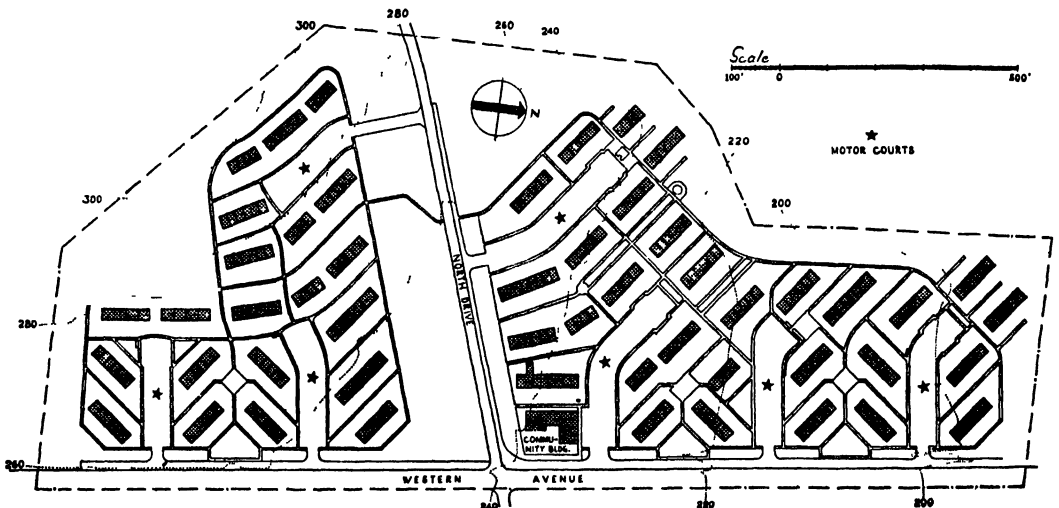
With the passage of the Lanham Act (Oct. 1940) Government housing construction for defense was centralized under the Federal Works Agency, and thereafter some of the most progressive work architecturally was done by the FWA Division of Defense Housing Coordination through able practising architects. Especially praiseworthy was the designation of a few units in some of the projects as "experimental" and released from the more rigid restrictions. Outstanding projects of the Division were the small 85-unit project at Windsor Locks, Conn., noted for its careful neat small-house design (Hugh Stubbins, Jr.), and the group housing on hillsides, with fine attention to orientation and access, by Gropius & Breuer at New Kensington, Pa., and at North Braddock, Pa., by James A. Mitchell and Dahlen K. Ritchey. A 400-unit project at Stamford, Conn., (B. Sumner Gruzen, Hugh A. Kelley, assoc.) was based upon the new device of chevron arrangement of house-rows upon the "cul-de-sac" side-street pattern already established in advanced site-

planning practise; whereas Eliel & Eero Saarinen arranged their 477 units at Center Line, Mich., charmingly about a central green.

Structural experiment under the Division was chiefly advanced at the Alexandria, Va., project by Kastner & Hibben (along with numerous plan variations) and included rammed-earth stabilized with cement. On the vast Mare Island Navy Yard development near San Francisco—a new city of 20,000 inhabitants—FWA added a 977-unit contingent, brilliantly designed by W. W. Wurster for a proprietary wood-frame prefabrication system and making a very handsome picture against the hills and sea.

The most spectacular new departure in "prefabrication" was Wallace Neff's small group of "bubble houses"—twin domed mushroom shells linked by a traditional service unit. Over an inflated semi-balloon, a "gunnite" cement shell was blown by air pressure; then a second shell added after a layer of insulation. These are at Falls Church, Va., under sponsorship of the Reconstruction Finance Corporation (q.v.). More representative of the average effort were TVA's portable cottages (Louis Grandgent and Carol Towne) transportable on trucks in three slices to be bolted together. Pierce Foundation's "horizontal bearing" system depended on the use of the whole above-window wall as an extended I-beam and on a single sheet of can-c-fiber coated both sides with asbestos-cement for combined protection and insulation; it was used with charming landscaping and color effect by Jan Porel in housing for Glenn Martin workers near Baltimore. The demountability of prefabricated houses was made use of during the year to cart away some of the 650 units erected the previous year under PBA at Indian Head, Md., by competing prefabricators in a test of their claims.

USHA architects produced an exceptionally fine project, as to site plan, design, and color, at Harbor Hills near Los Angeles (Reginald Johnson, ch. arch.; Donald B. Parkinson, Eugene Weston, Jr.; Lewis Eugene Wilson, A. C. Zimmerman, associates, Clarence S. Stein, consult. arch.). The site consists of 102 acres, much of it in deep canyons. Because of the hilly topography only a very limited area could be used economically. The 52 buildings are on 27 acres of land (see diagram). Another striking USHA job is the project at Yesler Terrace,



Courtesy of Reginald D. Johnson, Associated Architects

PLOT PLAN OF THE USHA HARBOR HILLS HOUSING PROJECT NEAR LOS ANGELES

Seattle (J. Lister Holmes, Wm. J. Bain, John T. Jacobsen, Wm. Aitken, Geo. W. Stoddard), its long horizontal houserows, with their handsome exterior boarding and fresh detailing, looking quaintly over the shoulders of the business center down at the sea. Other USHA successes were at Bethlehem, Pa., by Antonin Raymond, and at "Westpark," Bremer-ton, Wash., an 840-unit Navy project by Floyd A. Naramore, Clyde Grainger, and Perry B. Johnson.

Apartments. Manley Court at Summit, N.J., by McMurray & Schmidlin, and Country Gardens, Rye, N.Y., by Benson Eschenbach were superior exam-ples in the prevailingly favored "Colonial" mode. A large, ultra-modern set of apartments on a fine site at 240 Central Park South (actually finished 1940; designed by Mayer & Whittlesey) was most skillfully grouped and gave New York its first large banks of balconies. Other apartments of contem-porary design include Country Club Gardens, Den-ver (by Fisher, Fisher & Hubbell), and Governor Shepherd Apartments, Washington, D.C., by Joseph H. Abel.

Houses. Architects were still divided into "tradi-tionalist" and "modernist" camps, depending chiefly on preferences in draping plans increasingly con-temporary. In a less controversial area something like a basic twentieth-century architecture seemed to be shaping up, in which the scholarship was evocative rather than literal and the "modernism" direct rather than forced (For representative recent examples compiled with the aid of AIA, see *Architectural Forum* for April, with 81 houses regionally classified.)

Community Buildings. Economy and directness were increasingly essential in new defense *schools*; good precedents were furnished by such examples as the Consolidated School at College Station, Tex., designed by C. J. Finney and Ernest Langford on the basis of an exhaustive problem analysis by students of the Department of Architecture at Texas A. & M. College; and Garden Oaks elementary school at Houston, by Talbot Wilson & Irwin Mor-ris, with its original grouping and classroom plan-ning. A handsomely studied small school was the Grimes School at Burlington, Ia., by Holabird & Root; a monumental large one, the pie-shaped Cardinal Hayes High School in New York by Eg-gers & Higgins. Kleinhans Music Hall at Buffalo, (F. J. & W. A. Kidd, with Eliel Saarman, assoc.) finished earlier, was one of the truly distinguished buildings with "niceties of form and texture, of re-lationship and expression" of the sort which, de-clares Professor Hudnut, are now perforce becom-ing rare. Among *hospitals* were to be noted Bald-win House, Vassar College, Poughkeepsie, N.Y., by Faulkner & Kingsbury, with a neat three-pronged plan; Cairns Convalescent Center, Eleven-Mile Cor-ner, Arizona, by FSA architects. As a rarity among *churches*, the Church of Our Lady of the Lake, at Seattle, Wash., by Paul Thiry, took its departure from the Romanesque to arrive at an expression in brick—along with some plywood and other strictly modern materials—piously modest and simple, but withal decorative, in a manner illustrating the basic continuity of all fine building. The nave of the Cathedral of St. John the Divine in New York was opened to expose the full 601-ft. interior.

Government Buildings. A new rash of temporary structures once more defaced the Capital; some of the Government offices went into buildings to be described under "Commercial." Among the better post offices, done in the Office of the Supervising Architect (PBA), with H. L. Cheney as consultant, was that at Peoria, Ill., with an unusual, pleasing freedom, and the one at Gary, Ind., formal but

contemporary. At Philadelphia the combined post office and courthouse building was somewhat fussy and fluty as to exterior, but sumptuously elegant within.

Commercial. Federal Loan Agency, Washington, moved into an office building (A. R. Clas, arch., Holabird & Root, assoc. arch.) of that studied and elegant ultra-simplicity which is now as interna-tional among commercial and political capitals as the war itself. More commotion was created by the spirited Longfellow Building by Wm. Lescaze, with its appropriate, if stylistic, tier of balconies. It was rumored that Government offices would fill the new 1,000-room Statler Hotel under construction (Holo-bird & Root, arch's; A. R. Clas, assoc. arch.) In general character an insurance headquarters such as United Benefit Life Bldg., Omaha (Tinsley, McBroom & Higgins) is interchangeable with some of the post offices above, with the added feature of the most careful adjustment of complicated plan requirements. Small-town and suburban business blocks continued, by contrast, to be built as jum-bled aggregates of pasteboard fronts, so that a fluent, unified rendering, such as Corinne Griffith Bldg. No. 2 at Beverly Hills (Allen G. Siple) made a very superior impression. The outstanding store of the year was the highly sophisticated one de-signed by Raymond Loewy for Lord & Taylor on a suburban highway at Manhasset, L.I. (Starrett & Van Vleck).

England. Building was nearly at a standstill in England, but much that was new appeared in pro-jected programs of reconstruction. In their "in-terim" reports the committees of the Royal Insti-tute of British Architects placed unprecedented emphasis upon the need for "a national plan to cover the whole country, with regional divisions," and powers "mainly constructive in character rather than restrictive." Highly advanced recon-struction plans for Coventry, Birmingham, and Bristol were being prepared by the new Ministry of Works and Buildings under Lord Reith. At Cov-entry the city architect, E. F. Gibson, created a brilliantly improvised shopping center of demount-able materials such as corrugated sheets of asbes-tos. At Liverpool was exemplified, with equal bril-liance, the opposite approach—the city architect, L. H. Keay, produced solidly built, one-story house-rows cleverly planned for later conversion into two-story dwellings.

Germany. The ambitions of the State were fore-shadowed in the extensive treatment given by the architectural press to the problems of building in Africa, with examples garnered from as far South as the Cape. Meanwhile Dr. Ley, head of the La-bor Front, proposed prefabrication of house parts for storage and immediate erection in Germany after the war.

Latin and South America In their urban architec-ture, by virtue of strong influence from modern Italy and occasionally from the French LeCor-busier, these countries produced buildings equalled only by the best in North America in breadth and unity of effect. In *Colombia*, the Nuevo Colegio de San Bartolome by Trujillo Gomez & Martinez Cardenas or the group of apartments Cite Restrepo by Cuellar, Serrano, Gomez, might be mentioned. The output of *Argentina* showed a wealth of ur-bane, precise, polished work, as in the bold design of the Argentine Automobile Club at Buenos Aires by Antonio U. Vilar, or in several apartment blocks the work of Miguel M. Ibarra, Vargas & Aranda, Alberto Prebisch, Raul le Monnier, and others. The architect Jorge Vivanco achieved a pair of "mini-mal" two-story city houses taking rank with the

best designs anywhere of the past two decades. Among private houses, eclecticism was the vogue, with a strong demand for North American Colonial in the purest execution.

Russia. In Russia the ever hearty, ever unpredictable fantasy of the Slavic temperament showed the possibility of escape from that correct polished restrained anonymity which threatened to engulf the modern effort elsewhere. In locks on the Yaouza at Moscow, G. P. Golz achieved a riotous freedom with classical elements—including caryatids and the like—as decoration, occasionally throwing in a straight little Doric temple not unlike those of the early American classical revival. A review of the work of Prof. N. A. Trotski (deceased) showed the characteristic swing since 1918: beginning with a thoroughly “expressionist” project for the Soviet Palace of Labor (1922), going to absolutist modern in the district Soviet offices “Kirov” in Leningrad and a factory there, then again to the colossal, heavily studded, diamond-rusticated façade of the Leningrad Marine Academy (with whole projecting bays treated as pilasters supporting the characteristic heroic groups in naturalistic sculpture against the skyline)—then classical at Kuibyshev in the House of Culture (of the style family of the New York Metropolitan Museum) and again colossal and pseudo-classical in the Palace of the Soviets at Leningrad.

Other Countries. *Swiss* architecture included the new lecture building for the University of Basle by Dr. Roland Rohn, a design both sweeping in plan and refined in detail, and two very distinguished Catholic churches, one at Dornach by H. Baur, the other at Schönenwerd by Fritz Metzger, both in the general tradition of Karl Moser's other famous modern church at Basle. *Denmark's* high tradition was carried on in a group of row houses at Copenhagen by Kay Fisker, C. F. Moller, Eric Jensen, an Old People's Home (very striking and direct) by Arling Langkilde & Martin Jensen, and an Orthopedic Hospital at Aarhus (ch. arch. P. A. Poulsen) elegantly simple. *Japanese* architecture was most comprehensible to Europeans at its most Japanese; in this character it was well-nigh unbeatable as design; but a kind of jackdaw eclecticism made Japan the greatest repository since America's Gilded Age of serenely unconscious architectural humor.

See BUILDING, CONSTRUCTION INDUSTRY.

DOUGLAS HASKELL.

ARGENTINA. A federal republic of South America, consisting of 14 provinces, 10 territories, and the federal district, which includes the capital, Buenos Aires.

Area and Population. Land area, 1,079,965 square miles. Estimated population, Jan. 1, 1941, 13,318,320 (7,885,237 at 1914 census). Estimated populations of chief cities on Jan. 1, 1940, were: Buenos Aires, 2,364,263; Rosario, 514,613; Avellaneda, 230,775 (1938); Córdoba, 273,852; La Plata, 190,577 (1938); Tucumán, 146,577; Santa Fé, 144,587; Bahía Blanca, 115,148 (1938); Mendoza, 110,180; Mar del Plata, 62,415 (1938). The population is almost entirely of European (chiefly Spanish and Italian) extraction. In 1939 there were 88,806 marriages, 296,912 births, 141,267 deaths, 18,603 immigrants, and 13,932 emigrants.

Defense. As of Nov. 1, 1940, Argentina had 49,705 men in active military service, including conscripts; an additional 2,023 in the military and naval air forces, with about 200 planes; a trained army reserve of 282,503 men; and a naval force of 2 old battleships (recently modernized), 3 cruis-

ers, 4 old coast defense vessels, 16 destroyers, 3 submarines, 15 patrol vessels, and various auxiliary craft, all manned by about 11,500 men. The German military mission was discharged in 1940. In 1941 there were two U.S. naval officers on the staff of the Naval War College and seven U.S. air officers advising the government on aviation matters. See *History*.

Education and Religion. Illiteracy fell from 22 per cent of the voting population in 1930 to an estimated 16 per cent in 1939 (less than 2 per cent in the federal district). School statistics for 1939: Primary, 13,693 schools, 1,977,357 pupils; secondary, normal and special, 679 schools, 123,143 pupils; universities, six institutions with about 28,000 students. The Roman Catholic Church is supported by the state; all other faiths enjoy freedom of conscience.

Production. Agriculture, stock raising, and manufacturing are the principle occupations. Agricultural and pastoral products usually account for more than 90 per cent of all exports. Estimated yields of the chief crops (in metric tons): Wheat 7,505,000 in 1940-41; corn, 11,028,000 in 1939-40; linseed, 1,567,000 in 1940-41; ginned cotton, 80,000 in 1940-41; cane sugar, 540,374 in 1940; tobacco, 18,593 in 1939-40; grapes, 10,919,976 kilograms in 1940. Livestock slaughtered in “frigoríficos” in 1940 included 4,069,710 cattle, 5,481,050 sheep and 897,579 swine. Petroleum production in 1940 was 20,846,000 bbl., giving Argentina tenth rank among world producers. Small quantities of tungsten, lead, zinc, copper, gold, silver, and coal are mined. As of Dec. 31, 1938, there were 10,344 industrial establishments, with 29,001 employees and 212,841 workmen; during 1938 they produced goods valued at 2,416,776,400 pesos. In order of value of output, the leading manufacturing industries in 1939 were meat packing, textiles, electricity, flour milling, sugar refining.

Foreign Trade. Exclusive of specie, imports in 1940 totaled 1,498,757,000 pesos (1,338,332,000 in 1939) and exports 1,427,933,000 pesos (1,573,173,000 in 1939), on the basis of “real” values. Leading 1940 imports were fuels and lubricants, textiles, machinery and vehicles, iron manufactures, chemicals, foodstuffs. Values of the chief exports were (in pesos): Wheat, 284,169,758; chilled and frozen beef, 187,224,070; unwashed wool, 120,292,191; linseed, 119,165,833; cattle hides, 101,101,711; corn, 85,278,017; washed wool, 56,229,310. The United States furnished 29.1 per cent of the 1940 imports (17.2 in 1939); United Kingdom, 19.8 (19.9); Brazil, 7.8 (6.5). Of the 1940 exports, the United Kingdom took 36.4 per cent (35.9 in 1939); United States, 17.5 (12.0); Brazil, 5.3 (4.3). See TRADE, FOREIGN.

Finance. Budget estimates for 1941 placed receipts at 821,900,000 and expenditures at 1,082,000,000 pesos (854,320,000 and 1,062,343,500, respectively, in 1940). Actual governmental collections in 1940 were 982,881,000 pesos. The aggregate public debt of the national, provincial, and municipal governments rose from 6,486,230,000 paper pesos as of June 30, 1938, to 7,623,268,000 on June 30, 1940. On the latter date the debt was distributed as follows: National, 5,291,382,000; provinces, 1,584,408,000; municipalities, 848,745,000. Of the total debt, 5,870,270,000 pesos represented internal and 1,952,998,000 external obligations. The free market exchange rate of the paper peso was \$0.2309 in 1939, \$0.2288 in 1940.

Transportation. The railway mileage in 1941 was 26,184, of which 59 per cent was British-owned and 30 per cent state-owned. Gross operating re-

ceipts of all privately-operated lines declined from 413,110,000 pesos in 1936 to 360,000,000 in 1940. The net receipts of 26,000,000 pesos in 1940 barely sufficed to cover about one-third of loan interest requirements. For highways, see **ROADS AND STREETS**. In 1940 the nine domestic and foreign commercial air lines operating in Argentina flew 1,556,772 kilometers and carried 40,690 passengers, 77,059 kilograms of mail, and 62,272 kilograms of express. New schedules inaugurated by Pan American-Grace Airways in April, 1941, reduced the round-trip time between the United States and Argentina to one week. Net registered tonnage of ships entering Argentine ports fell from 9,453,000 in 1939 to 6,690,000 in 1940. For Argentine-Bolivian railway accords, see **BOLIVIA**.

Government. The Constitution of 1853 vests executive power in a president chosen for a six-year term by 376 electors representing the provinces and the federal district. The National Congress consists of a Senate of 30 members elected for nine years by the provincial legislatures and a Chamber of Deputies of 158 members elected for four years by universal male suffrage. One-third of the Senate retires every three years and one-half of the Chamber every two years. The governors of the provinces, elected by local suffrage, exercise extensive powers independently of the federal government. By the elections of 1940 (see **YEAR BOOK** for 1940, p. 37), the Radicals gained control of the Chamber of Deputies. President Roberto M. Ortiz, who assumed office Feb. 20, 1938, developed a chronic illness and on July 3, 1940, designated Vice-President Ramón S. Castillo as Acting President.

HISTORY

The extension and intensification of the World War during 1941 had severe repercussions in Argentina. It produced an acute economic crisis, aggravated political and ideological controversies, and aroused growing opposition to the government's policy of strict neutrality.

Political Events. Early in 1941 there was a widening of the breach between Acting President Castillo, leader of the conservative Government coalition, and the Radical party, which controlled the Chamber of Deputies. Charging that Government candidates had won through fraud and manipulation, the Radicals demanded annulment of provincial elections held in Santa Fé and Mendoza on Dec. 15, 1940, and Jan. 5, 1941. Acting President Castillo side-stepped this demand. However his Finance Minister, Federico Pinedo, made a deal with the Radicals whereby new elections would be held in both provinces in return for Radical legislative support of Pinedo's program for meeting Argentina's economic crisis (for program, see **YEAR BOOK** for 1940, pp. 37-38). When the Acting President repudiated this arrangement, Pinedo resigned (January 14). The Radicals retaliated by refusing to act on any legislation submitted by the Government.

Ortiz Return Sought. A week later Foreign Minister Julio A. Roca, a leading advocate of inter-American cooperation and mutual defense, resigned because of lack of confidence in Acting President Castillo. The two vacant Cabinet posts were filled by Dr. Enrique Ruiz Guinazu (Foreign Affairs) and Dr. Carlos Alberto Acevedo (Finance). But the political crisis continued, with the ailing President Ortiz taking a more active role in opposition to Castillo's policies. Although elected by the conservative coalition, Ortiz had won the support of the Radicals and other pro-democratic forces by his fight against electoral fraud and corruption. There was a growing demand that Ortiz resume his Presi-

dential functions, but this was stilled on April 17 when a Senate committee appointed to investigate his health reported that almost total blindness prevented the President from assuming office.

Castillo Strengthens His Hold. This report strengthened Acting President Castillo's position. On April 25 he announced that in view of the Radicals' legislative boycott he would govern temporarily by decree. Public opinion, once predominantly favorable to the Radicals, was being alienated by the legislative deadlock. Consequently the Radicals on May 6 were forced to end their boycott and announce that they would support all measures tending to solve Argentina's economic, social, and defense problems.

Nevertheless the sessions of the 78th Congress, which opened on May 28, were marked by continual bickering between the Acting President and Congress, particularly over the issue of German activities in Argentina. When Congress recessed on October 1 only a small part of the legislation urgently demanded by Castillo had been adopted. Congress approved the purchase of 16 Italian merchant ships and the allocation of \$127,000,000 for defense. But it failed to pass bills authorizing the 1941 budget, a public works program, purchase by the state of unsold farm surpluses, and the floating of a dollar loan in the United States.

Buenos Aires Council Dissolved. By withholding action on these measures, Congress hoped to force the convocation of an extraordinary session, which would give it an opportunity to check Government manipulation of elections scheduled to be held in Buenos Aires and two other provinces during December. Acting President Castillo, however, refused to call a special session. Instead he dealt the opposition a serious blow on October 10 when his Cabinet voted to supplant the elected Municipal Council of Buenos Aires with a board of 21 Government appointees.

Charges of racketeering and corruption had been made against certain members of the Municipal Council. Nevertheless, the press and pro-democratic parties and organizations attacked the Government's move as an unconstitutional blow at the democratic system. The Council, ousted from City Hall by the police, declared the dissolution order illegal and continued to meet regularly in other places. The Radical party, hinting at the approach of civil war, denounced the Acting President's action as an attempt to maintain himself in power "by arbitrariness." On October 25 the Radicals announced that they would seek to impeach Castillo for exceeding his constitutional authority, while the Municipal Council decided to carry its case to the Supreme Court.

Provincial Elections. The Radical attack upon the Acting President received a serious setback as a result of Government victories in provincial elections held in Catamarca (Castillo's home province) on November 23, in San Juan on November 30, and in the province of Buenos Aires on December 7. These elections tipped the national balance of political power in favor of the National Democratic party and indicated the probable victory of its candidate in the 1943 Presidential election. Catamarca gave the National Democrats 12,326 votes against 6,694 for the Radicals. In Buenos Aires Province, the Castillo Administration's candidate for Governor won by 293,604 votes to 193,284 for the Radical candidate. The defeated Opposition charged that the Buenos Aires election was won by means of "shameful" electoral frauds and demanded its annulment. The Radicals were prevented from pressing their charges by the declaration of a state of

siege on December 16, under which all constitutional guarantees were suspended.

The Anti-Nazi Drive. The suspicion with which democratic elements viewed the Castillo Administration had been deepened by its apathy toward German and pro-Nazi activities. These assumed a more violently anti-democratic character after the German victories in the Balkans during April and May. There was an alarming anti-democratic demonstration by the semi-militarized Nationalist Youth Alliance in Buenos Aires on May Day. Numerous other incidents indicated that Buenos Aires was the center of German fifth-column activities throughout South America, and that native Fascist and pro-Nazi elements were receiving active support and encouragement from Berlin.

Repeated charges that army officers were implicated in anti-democratic and pro-totalitarian activities led the Chamber of Deputies on June 11 to pass a resolution, 73 to 16, asking the Government to disclose what steps had been taken to curb fifth-column activities. The reply made by the Minister of Interior on June 18 was deemed unsatisfactory. The following day the Chamber voted 95 to 1 for the establishment of a special committee with full powers to investigate subversive activities. Headed by Deputy Raúl Damonte Taborda (Radical) and including representatives of the other recognized political parties, the committee launched a vigorous probe similar to that made by the Dies Committee in the United States. It conducted raids upon offices and headquarters of German and Argentine pro-Nazi organizations that uncovered important evidence. Beginning August 29, the committee published its findings in a series of reports that caused a profound revulsion of Argentine opinion against Germany and pro-Nazi movements in Argentina.

Investigating Committee's Report. On the basis of evidence submitted in its reports, the investigating committee charged that the German Nazi party continued to operate in Argentina although it had been dissolved by Presidential decree on June 15, 1939; that the party was organized on military lines, with "cells" widely distributed over the country; and that the German Embassy guided and helped to finance its activities. The committee reported that disbursements by the German Embassy rose from \$37,720 during the normal year ended June 30, 1939, to \$1,435,920 in 1940-41. Of \$120,000 worth of bearer checks, cashable without endorsement, issued by the Embassy during the last week of June, 1941, \$24,000 was traced to the pro-German newspaper *Pampero*.

The committee further charged that German schools in Argentina were controlled by the German Embassy; that the teachers were sent from Germany and required to take the oath of obedience and loyalty to Adolf Hitler; and that the textbooks were received from the Reich and distributed by the Embassy. The schools were said to follow regulations issued in Berlin rather than those established by Argentine law. These revelations were buttressed by findings of a secret inquiry into Nazi activities carried on by the Senate, which was controlled by the government parties, as well as by the exposure of plots and conspiracies against the republic by pro-Nazi army officers and organizations. Public opinion, aroused by these developments, forced the reluctant Government to take more active measures in defense of democratic institutions.

Pro-Nazi Conspiracies. Late in July the police in Paraná, capital of Entre Ríos province, broke up a plot by a "nationalist" organization to overthrow

the provincial and national governments by a sudden coup. The ensuing investigation produced evidence of a German military organization working in close cooperation with the local "nationalists." Arms and munition caches were discovered. Evidence uncovered in Paraná led to the discovery of similar German military organizations in the province of Córdoba, collaborating with Argentine "nationalist" factions in anti-democratic plots and propaganda.

The Minister of Interior on August 2 banned all activities in Buenos Aires of the Superior Council of Argentine Nationalism, led by the retired Gen. Batista Molina. The next day the Government ordered the dissolution of the Nationalist Youth Alliance, also headed by General Molina, as a totalitarian military organization. General Molina's activities led the Federal Attorney General to rule on August 5 that he must stand trial for sedition before a civil court.

On September 23 loyal troops frustrated a plot by pro-Nazi air force officers to overthrow the republic. The army seized military airdromes in Paraná and Córdoba, center of the conspiracy, and later extended its precautions to other parts of the country. A number of air force officers were arrested. On September 25 Gen Angel Maria Zuloaga, chief of the military air arm, was removed from his post. He was later confined to quarters for four months for making public his letter of resignation. In October the War Ministry effected a sweeping reorganization of the officer personnel of the air force. Radical Deputies charged that the military conspiracy represented a "Nazi attempt to seize control of the Argentine Government through Quislings," and accused Acting President Castillo of "joining in the plotting." Castillo, in turn, attributed the plot to Radicals, Nationalists, and others.

Enforcement of "Neutrality." Anti-Axis elements, mobilized by the powerful pro-Ally Accion Argentina movement, were stirred by these developments. They demanded revision of the Government's strict neutrality policy in favor of Britain and her Allies, and for stronger action against anti-democratic forces at home. Accion Argentina arranged for demonstrations of unprecedented size in Buenos Aires and 5,000 other places on November 29 to promote "the triumph of democracy, both inside and outside Argentina." Twenty-four hours before the meetings were to be held, Acting President Castillo ordered their cancellation on the ground that the Government could not tolerate public protests against its neutrality policy. The ban was enforced everywhere except in Entre Ríos Province, where the Radical Governor, Enrique Mihura, openly defied the Government's orders.

With the exception of *Pampero*, the press unanimously condemned the Acting President's policy. Nevertheless police broke up demonstrations favoring the United States after that republic became involved in the war. On December 13 a decree was issued declaring Argentina neutral toward Germany and Italy but giving the United States the privileged status of nonbelligerency. On December 15 Castillo announced his determination to curb pro-Axis propaganda and on the following day he declared a state of siege, ostensibly for this purpose. However the first application of the order was the cancellation on December 17 of an Accion Argentina mass meeting called to "pay homage to President Roosevelt" and to affirm Argentine adherence to the democratic cause. The press, which was overwhelmingly democratic, was forbidden to print anything affecting the neutrality of the nation, deprecating "the government, political regime, head of

state or officials" of any belligerent nation, or that would disturb friendly relations with other countries.

Friction with Germany. The German Ambassador to Argentina, Baron Edmund von Thermann, became the target of persistent criticism after agents of the Chamber's investigating committee on July 24 seized a wireless sending set of German make that was being sent secretly from Buenos Aires to Peru under cover of diplomatic immunity. Other incidents followed, particularly the flight to Brazil of the Embassy's press chief, Gottfried Sandstede, reputed head of the Gestapo in Argentina, to escape trial on charges of misusing public funds and forming an illegal organization.

On September 15 the Chamber of Deputies approved, 78 to 1, a resolution asking the Government to dissolve German social, charitable, and labor organizations as illegal fronts for the German Nazi party. The resolution also asked the Government to deport the leaders of these organizations and to deprive the German Chamber of Commerce of its legal registration. It further declared that the German Ambassador had "exceeded the functions of his office and abused his diplomatic privilege."

The German Ambassador protested strongly against the "insults" addressed to him during the debate in the Chamber, and the German press began an anti-Argentine campaign. On September 21 Acting President Castillo announced that his administration "dissociates itself from statements made in the Chamber of Deputies." Rejecting Congressional and other pressure for the dismissal of the German Ambassador, he declared on September 25 that the conduct of international affairs was the exclusive responsibility of the Executive. The Foreign Office sought to induce Berlin to withdraw Baron von Thermann voluntarily, but without success.

Defense Preparations. While continuing to discount the danger from the Axis powers, the Government in October obtained the approval of Congress for a five-year rearmament plan to cost 712,000,000 pesos for the navy and 646,000,000 pesos for the army. The War Minister announced November 27 that the standing army would be raised to 250,000 men.

The Government followed up actively the initiative taken in December, 1940, when Argentina and Uruguay invited neighboring republics to join them in strengthening defense facilities in the River Plate region. Military delegations from Brazil, Chile, Uruguay, Paraguay, Bolivia, Peru, and the United States attended the Argentine independence anniversary celebration in Buenos Aires on July 9, and staff talks on continental defense problems were reported. Talk of an Argentine-Brazilian-Chilean military alliance against overseas aggression followed the visits of the Argentine War Minister, Gen. Juan N. Tonazzi, to Rio de Janeiro in August and to Santiago in September.

Relations with United States. The negotiations with Brazil and Chile apparently had other objectives in addition to continental defense. It was indicated that the Argentine Government wanted to prevent an unrestrained rearmament race among the ABC powers, and also to lessen the need for the establishment of United States bases in South America. Anti-United States elements showed apprehension at the decision of Brazil and Uruguay to accept United States funds for the construction of naval and air bases, which would be placed at the disposal of the United States in certain circumstances. On June 27 the Argentine Government rejected the Uruguayan proposal that any American power at war with a non-American power should be treated as a nonbelligerent.

While displaying its traditional hostility to the spread of United States influence in South America, the Argentine Government was nevertheless drawn into more friendly relationship with Washington. This trend was due partly to Argentina's growing economic dependence upon the United States and partly to the predominantly pro-democratic sentiments of the Argentine people. The United States in 1941 displaced Great Britain as Argentina's best customer and chief source of finished goods. In October the Argentine Foreign Minister stated that Washington had earmarked \$70,000,000, or 295,000,000 pesos, for Argentina's use under lease-lend facilities. On November 27 an Argentine military mission sailed for the United States to purchase armaments.

Early in September the Argentine Government accepted an Anglo-American trade deal providing for the disposal of farm surpluses to the Allies and barring future sales of strategic war materials to the Axis powers. On November 27 it undertook to sell to the United States all of Argentina's tungsten production up to 3,000 short tons yearly for three years. The Argentine Congress in July ratified the important conventions signed at the Havana Conference of American Foreign Ministers in 1940. Later there was an exchange of visits by official delegations representing the Argentine Chamber of Deputies and the U.S. House of Representatives.

Reciprocal Trade Treaty. The Roosevelt Administration's eagerness to win Argentine friendship was indicated by the partial relaxation of the ban on imports of Argentine beef on April 1, and by the conclusion on October 14 of a reciprocal trade agreement that aroused vigorous protests from the farming and ranching sections of the United States. In Argentina the treaty had important political consequences favorable to the United States. Under the treaty, Argentina obtained U.S. tariff reductions on flaxseed, canned corned beef, etc., and a pledge not to raise duties on other export products. The concessions, or bindings of duties, covered 84 items which accounted for 75 per cent of Argentine sales to the United States in 1940. In return Argentina granted tariff reductions or bindings of duties on 127 items imported from the United States, accounting for 30 per cent of U.S. sales in 1940.

Other Foreign Relations. Continuing its program of developing closer economic and political relations with neighboring republics, Argentina concluded new trade deals with Brazil on January 29 and April 9. On November 21 the first step toward elimination of mutual Argentine-Brazilian customs barriers was taken, when their Foreign Ministers signed a treaty in Buenos Aires granting free entry to the products of new industries in either country.

Argentina participated in the Regional Economic Conference of the Río de la Plata (q.v.) in Montevideo beginning January 27. On February 10 representatives of Argentina, Bolivia, and Paraguay met in Buenos Aires and signed five agreements. One, signed by all three countries, provided for regularization of their joint navigation, irrigation, and other rights in the waters of the Pilcomayo River. Argentina and Bolivia signed two accords regulating and encouraging tourist travel and extending Argentine financial aid for the construction of a railway and exploitation of petroleum deposits in Bolivia (see BOLIVIA under *History* for details). Two agreements signed by Argentina and Paraguay provided for dredging and marking the channel of the Paraguay River, and for the establishment of a foreign exchange stabilization fund in Paraguay with Argentine aid.

A conference of highway engineers from Argen-

tina, Bolivia, Chile, and Peru, meeting in Buenos Aires in May, fixed the definitive routes of the Pan American Highway through those countries preliminary to the conclusion of diplomatic conventions for their coordinated development. The Argentine-Chilean controversy over conflicting claims to Antarctic territories was amicably settled by a preliminary agreement signed by representatives of the two governments in Santiago, Chile, March 26.

Early in the year the Argentine Government extended a 160,000,000-peso credit to Spain for the purchase of surplus Argentine wheat, cotton, and meat. Ambassadors—replacing Ministers—were exchanged with Bolivia and Japan.

See BOLIVIA, BRAZIL, CANADA, and CHILE, under *History*; *Architecture*; *Chemistry, Industrial*; *Dairying*; *Lend-Lease Administration*; *Livestock*; *Music*; *Naval Progress*; *Pan Americanism*; *Regional Conference of the Rio de la Plata*; *Tungsten*; *Wool*.

ARIZONA. A mountain State. Area: 113,909 sq. mi.; including 329 sq. mi. of inland water. Population: (1940 census) 499,261. The urban population comprises 34.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 14.4 per cent (U.S. average, 10.2); elderly (65 years and over), 4.8 per cent. Arizona ranks 5th among the States in area, 43d in population, and 44th in density, with an average of 4.4 persons per square mile. The largest city and capital is Phoenix with 65,414 inhabitants. There are 14 counties and two cities of more than 10,000 inhabitants (see article on *POPULATION* in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see *VITAL STATISTICS*.

Education. According to the latest Biennial Survey of Education, there were 110,056 pupils enrolled in the State School System during the school year 1937-38. Of this total, 89,708 were enrolled in kindergartens and elementary schools and 20,348 in secondary schools. The instructional staff comprised 3,364 persons, who received an annual salary of \$1,535 (U.S. average, \$1,374); 802 or 25.5 per cent were men. Expenditures for all public schools in 1937-38 were \$9,773,856, making a total cost per capita of \$23.33 (U.S. average: \$17.15). For higher education, see under *Arizona* in the table of *UNIVERSITIES AND COLLEGES*.

Transportation. State highway mileage in 1939, including streets under State control, totaled 3,614, of which 2,902 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 143,451, 112,945 were private and commercial automobiles, 350 busses, and 25,108 trucks and tractor trucks. Gross motor-fuel consumption was 113,435,000 gal. Net motor-fuel tax receipts were \$4,769,000, the rate being five cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$1,225,000.

Railways of all classes extended 2,234 miles (Dec. 31, 1939) .95 per cent of the total mileage in the United States. Class I steam railways (906 miles) reported 2,619,457 tons of revenue freight originating in Alabama in 1940 and 5,622,933 tons terminating in Arizona. There are 44 airports and landing fields in the State (15 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 131 civil aircraft in the State and 588 commercial and private pilots (517 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 770,100, as compared with 676,800 acres in 1940. According to the latest census, there

are 18,468 farms, valued at \$153,676,675, averaging 1,388.9 acres each. Farm population numbered 115,349 or 23.1 per cent of the total. Leading crops with production were: Cotton lint, \$18,067,000, 203,000 bales; commercial truck crops, \$11,756,000; hay, \$6,807,000, 603,000 tons.

Manufacturing. According to the 1939 Census of Manufactures, there were 332 manufacturing establishments in Arizona, employing 6,096 wage earners who received wages of \$7,162,639 for the year. Total value of products was \$97,529,481; value added by manufacture, \$32,041,290.

Mineral Production. According to preliminary reports of the U.S. Bureau of Mines, Arizona continued as the largest copper-producing State in 1941, and its output (665,500,000 lb. valued at \$77,863,500) was greater than that in any year since 1929, which saw a record production of 830,628,411 lb. The 1941 figure was 18 per cent over 1940 (562,338,000 lb. valued at \$63,544,194). Other leading minerals are gold, 315,000 fine oz. valued at \$11,025,000 in 1941 (294,807 fine oz., \$10,318,245, in 1940) and silver, 7,551,000 fine oz., \$5,369,600 (7,075,215 fine oz., \$5,031,264). Total value of mineral production in 1939 was \$75,056,965, or 1.77 per cent of the United States total, giving Arizona 15th place among the States in value of mineral products.

Trade. According to the 1940 census there were 607 wholesale establishments in Arizona, employing 3,854 persons, reporting net sales for 1939 of \$96,528,000 and annual pay roll of \$5,623,000. There were 6,242 retail stores with 16,577 employees, reporting sales of \$162,003,000 and pay roll of \$17,119,000. Service establishments numbered 1,819, employing 3,283 persons for \$3,185,000 per year, and reporting a business volume amounting to \$10,880,000. The leading business center of the State is Phoenix which reported wholesale sales of \$49,519,000, retail sales of \$47,922,000. Tucson reported sales of \$12,750,000 wholesale and \$23,646 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Arizona was \$12,470,000. Under the Social Security program, financed by Federal funds matching State grants, 8,863 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$28.24 (U.S. average pension, \$21.08); 6,563 dependent children in 2,471 families received average monthly payment of \$32.83 per family (U.S. average, \$32.58), and 404 blind persons received \$27.40 per month (U.S. average \$25.58). General relief cases, which are supported by State and local funds only, numbered 2,799 and received \$16.56 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 4,626 (\$306,000); NYA student work program, 1,842 (\$12,000); NYA out-of-school work program, 1,778 (\$33,000); WPA, 5,608 (\$438,000); other Federal emergency projects, 34 (\$3,000); regular Federal construction projects, 2,005 (\$256,000). The Farm Security Administration certified subsistence payments totaling \$26,000 for the month to 1,338 cases.

Legislation. The Legislature convenes in regular session on Monday after the first Tuesday of January in odd years. It is composed of 19 Senators and 52 Representatives, all of whom were Democrats in 1941.

The 1941 Legislature adjourned Mar. 17, 1941,

after a 64-day session during which 135 measures were passed out of 517 introduced. Ten were vetoed by the governor leaving 125 new laws for the statute books; 37 carried the emergency clause, thus being exempted from the referendum provisions of the Constitution and taking effect immediately upon approval by the governor. The following is a brief summary of the Acts considered to be of chief importance, according to Director Mulford Winsor of the State Department of Library and Archives at Phoenix.

Chap. 5. Permits counties and municipalities to acquire and operate airports, or to execute contracts for the operation of publicly owned airports by other agencies, whether within or without the corporate limits *Chap. 9.* Repeals prior law requiring a prisoner in the State prison to serve full minimum sentence before being eligible to apply for parole *Chap. 24* Defines different grades of eggs, and requires egg producer to have eggs inspected and stamped before sale *Chap. 31.* Enabling act, permitting formation of sanitary districts outside of incorporated cities and towns for sewage disposal and related purposes. *Chap. 32* Increases maximum amount of old age assistance to any one recipient to forty dollars per month Former maximum, thirty dollars *Chap. 33* Sets up examining and regulatory board for osteopaths Formerly under board of medical examiners (Referendum petition filed against this act, hence, operation suspended pending general election in November, 1942) *Chap. 43* Enabling act for the formation of soil conservation districts *Chap. 44* Sets up five-member citizen board for administration of State hospital for insane Formerly under board of directors of State institutions *Chap. 57* Places regulation of child placement and child welfare agencies and institutions (primarily neglected and dependent children) under State department of social security and welfare No prior regulation. *Chap. 65.* Abolishes board of directors of State institutions Institutions placed under control of governor, and purchasing agent created for centralized purchasing of supplies for all State institutions *Chap. 80* Sets up complete new juvenile code for handling of neglected, dependent, and delinquent juveniles Principally court procedure. Prior law repealed. *Chap. 81* Completely revises existing law relating to agricultural and vegetable seed Regulation and inspection *Chap. 105* Creates new State department of health, governing administration of all State public health activities. Formerly under State board of health New board consists of five citizen members, five-year staggered terms Makes superintendent of public health full time job, five year term *Chap. 108* Provides for taxation of fuels other than gasoline used to propel motor vehicles on highways. Tax collected from consumer *Chap. 112* Creates examining and regulatory board for chiropractors. *Chap. 124* Complete revision of unemployment compensation law. (See also FIRE PROTECTION)

The legislature appropriated during the regular session a total of \$6,996,341.61 for operation of the State government during the ensuing biennium and for deficiencies in current operations. This sum does not include a number of continuing appropriations set up by law, which must be raised each year without further action by the legislature. Of the total sum, \$6,806,058.56 is contained in the general appropriation Act. Twenty-five other measures became law, appropriating \$190,283.05. Two of the latter were for expenses of the legislative session, totaling \$99,621. As usual, many relief bills were introduced, asking for payment of claims against the State for which funds were not otherwise available. Nine were passed, appropriating \$11,191.98.

Finances. Total tax collections in Arizona for the fiscal year ending in June, 1940, were \$20,194,000. Total sales taxes amounted to \$10,018,000, including general sales, \$4,010,000, and motor fuel, \$4,610,000. Taxes on specific businesses and occupations ran to \$483,000, while general and selective property taxes came to \$4,739,000. The net income taxes were \$1,363,000. Cost payments for the operation of general government totaled \$16,806,000 in 1939, the latest year available. (Revenues for the general government for that year were \$21,398,000.) Cost of operation per capita was \$34.23. Total gross debt outstanding in 1941 was \$2,830,000 as compared with \$3,708,000 in 1932.

Officers and Judiciary. The Governor is Sidney P. Osborn (Dem.), inaugurated in January, 1941, for a two-year term; Secretary of State, Harry M. Moore; Attorney General, Joseph W. Conway; State Treasurer, Joseph Hunt; State Auditor, Ana Frohmiller. Chief Justice of the Arizona Supreme Court is Alfred C. Lockwood, there are two associate members elected by popular vote for six-year terms.

ARKANSAS. A west south central State. Area: 53,102 sq. mi., including 377 sq. mi. of inland water. Population: (1940 census) 1,949,387. The urban population comprises 22.2 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 24.8 per cent (U.S. average, 10.2); elderly (65 years and over), 5.4 per cent. Arkansas ranks 26th among the States in area, 24th in population, and 29th in density, with an average of 37.0 persons per square mile. The largest city and capital is Little Rock with 88,039 inhabitants. There are 75 counties and nine cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Ralph B. Jones, Commissioner of Education, there were 472,014 pupils enrolled in the public schools of Arkansas during the school year 1939-40, 398,246 in elementary schools and 73,768 in secondary schools. Teachers numbered 13,173 and received an annual average salary of \$574. Total expenditures for the year were \$14,023,914. For higher education, see *Arkansas* in table of UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 9,173, of which 8,460 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 261,997; 190,589 were private and commercial automobiles, 430 busses, and 66,158 trucks and tractor trucks. Gross motor-fuel consumption was 191,421,000 gallons. Net motor-fuel tax receipts were \$11,412,000, the rate being six and one-half cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$3,399,000.

Railways of all classes extended 4,527 miles (Dec. 31, 1939) 1.93 per cent of the total mileage in the United States. Class I steam railways (2,961 miles) reported 8,438,975 tons of revenue freight originating in Arkansas in 1940 and 5,492,291 tons terminating in Arkansas. There are 24 airports and landing fields in the State (7 lighted fields) and one seaplane anchorage. On July 1, 1941, according to the Civil Aeronautics Authority, there were 175 civil aircraft in the State and 924 commercial and private pilots (824 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 6,618,000, as compared with 6,555,000 acres in 1940. According to the latest census, there are 216,674 farms, valued at \$456,848,156, averaging 83.5 acres each. Farm population numbered 1,113,662 or 57.1 per cent of the total. Leading crops with production were: Cotton lint, \$118,490,000, 1,445,000 bales; cottonseed, \$30,719,000, 644,000 tons; corn, \$30,609,000, 40,812,000 bu.; hay, \$16,311,000, 1,648,000 tons; rice, \$12,476,000, 11,342,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 1,178 manufacturing establishments in Arkansas, employing 36,254 wage earners who received \$24,577,234 in wages for the year. Total value of products was \$160,166,984; value added by manufacture, \$67,390,149.

Mineral Production. The chief mineral product is petroleum, of which 25,583,000 bbl. were produced

in 1940 (preliminary figures) as compared with 21,238,000 bbl. valued at \$16,790,000 in 1939. Total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$29,507,194, seven-tenths per cent of the total value for the United States. See GEOLOGICAL SURVEY.

Trade. According to the 1940 census there were 1,785 wholesale establishments in Arkansas, employing 7,890 persons, reporting net sales for 1939 of \$248,916,000 and annual pay roll of \$9,643,000. There were 20,328 retail stores with 32,581 employees, reporting sales of \$298,301,000 and pay roll of \$23,775,000. Service establishments numbered 6,696, employing 9,762 persons for \$5,933,000 per year, and reporting a business volume amounting to \$22,872,000. The leading business center of the State is Little Rock which reported wholesale sales of \$73,500,000, retail sales of \$41,063,000, and \$4,267,000 receipts for its service establishments. Fort Smith reported sales of \$24,772,000 wholesale and \$15,755,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Arkansas was \$29,840,000. Under the Social Security program, financed by Federal funds matching State grants, 26,046 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$7.69 (U.S. average pension, \$21.08); 16,486 dependent children in 6,462 families received average monthly payments of \$13.50 per family (U.S. average, \$32.58); and 1,142 blind persons received \$9.09 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 3,463 and received \$4.60 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 9,392 (\$622,000); NYA student work program, 1,377 (\$9,000); NYA out-of-school work program, 7,996 (\$115,000); WPA, 29,757 (\$1,329,000); regular Federal Construction projects, 2,788 (\$231,000). The Farm Security Administration certified subsistence payments totaling \$17,000 for the month to 692 cases.

Legislation. The General Assembly convenes in regular session on the second Monday of January in odd years. It is composed of 35 Senators (all Democrats in 1941) and 100 Representatives (99 Democrats and one Republican). The following summary of 1941 legislation is condensed from a report of the *Arkansas Gazette*.

The 1941 Legislature tried to solve its revenue problem by strengthening existing tax laws rather than levying new taxes. As a result no new tax was adopted, but two existing levies were revised to broaden their scope. These were the Strickland corporation income tax, estimated to bring in \$300,000 to \$500,000 in new revenue, and the Administration's gross receipts tax which, on July 1, will replace the retail sales tax without increasing the two per cent rate. Under the gross receipts tax law, every retail merchant in the State must obtain a permit (without cost) to do business and will be allowed to either absorb the tax himself or pass it on to the consumer. The Strickland tax was the most controversial. The bill was killed twice and passed on its third appearance by the exact three-fourths majority required. It eliminated the exemption of \$1,500 and a graduated tax up to five per cent on all corporation income over \$25,000 in place of the previous flat two per cent tax. Dividends from State and national banks are taxable but banks themselves are exempt.

The Assembly codified the liquor, cigarette, and

motor fuel tax laws. It replaced the inheritance tax with an estate tax that exempts small incomes and is designed to attract wealthy persons to Arkansas. The ferry tax was repealed and several license fees affecting farmers were reduced. Liquor dealers were given the right to sell native wines without having to purchase a special wine retailers license. To aid counties, a law was passed providing for appointment of delinquent personal property tax collectors. The gasoline 6.5 cents a gallon tax was applied to substitute fuels. Collection of severance taxes was tightened. The State was required to maintain highway continuations through all cities and towns, and the Highway Commission was permitted to let road construction contracts on a basis of need instead of sectional parity.

The schools were second on Governor Adkins' legislative "must" list and as a result the General Assembly treated them kindly. Teachers' salaries, which have been among the lowest in the nation, were given a boost with the Rozzell bill setting up State aid toward establishment of minimum salaries. The amount of State aid, however, was below expectations of proponents—only about \$300,000 a year instead of the \$600,000 sought. The Administration's school program was further carried out by reorganizing the State Board of Education; substituting for the Textbook Commission professional selection committees with local choosing of texts from multiple lists; reestablishing the county school supervision system; providing for annual teacher examinations by the chief county school officer. Revenue was provided to permit rural schools to operate full 8-month terms this school year.

Administration-sponsored legislation reorganized 12 State boards, commissions, and departments and abolished three existing commissions. The State vocational trade school in Little Rock and the Department of Aeronautics were created. A merit system was established for the Welfare Department to conform to Federal requirements.

The free-spending Legislature turned down less than half a dozen bills submitted by the Budget Committee and finally wound up with a total of \$62,249,300 appropriated for operation of the State government and \$136,330,557 for refunding of the highway debt. The model 1939 land policy act, which functioned on a single-cylinder basis during the past two years without an appropriation and without an effective land title law, was expected to operate on all four as a result of benefiting legislation passed; a chief appraiser and four assistants were provided for. Legislation affecting counties largely involved financial matters.

A trend toward legislative regulation of business and professional life started in Arkansas four years ago and was still strong this year with 34 measures subject to this classification. Included are items of price fixing, taxation, supervision, licensing, and confiscation. The dairy measure would improve quality of products by guarding their production. The optometry bill would restrict "cut-rate" competition. Prices would be fixed on native wines and barber work. The itinerant merchant measure is intended to keep out of the State many independent truckers. Few of the bills drew opposition, though critics charged that one result would be to increase living costs and drive out competition.

The Steel unemployment compensation bill was the most important enactment in the field of social security; it insures employers of a merit-rating system beginning in April, 1942. Retirement benefits were extended to several groups; assignment, sale or pledge of pension funds for any purpose was prohibited.

By legislation, the State joined the Interstate Oil Compact and a compact with Louisiana and Texas to promote the sale of rice.

The Pilkinton preferential primary law put back into effect the double primary election system with a two-year limitation. A "Litte Hatch Act" would prohibit State employees from contributing, even voluntarily, to any State campaign fund. The one-dollar penalty for delinquent poll tax assessments was abolished, and invalids were permitted to vote by absentee ballot. The procedure for filing initiative and referendum petitions was revised.

Efforts to revise the marriage laws almost came to naught despite a last-minute plea by Governor Adkins. The minimum marriage age of males was increased from 16 to 18 and of females from 14 to 16. Issuance of marriage licenses was prevented to persons intoxicated or under the influence of narcotics. Defeated were measures to require physical examinations and waiting periods before licensing. A new ground of divorce was added—insanity established by three years' hospitalization.

From start to finish refunding was the number one topic of legislative discussion. In addition to highway bond financing were measures affecting refunding in counties, cities, and school districts.

The Legislature had one ear cocked for measures to tie in with the national defense program. It passed bills designed to curb sabotage, subversive activities and un-American organizations. It enacted to aid selective service trainees and gave schools a patriotic holiday, Armistice Day.

Finances. Total tax collections in Arkansas for the fiscal year ending in June, 1940, were \$34,111,000 (partial report for 1941: \$31,767,000). Total sales taxes in 1941 amounted to \$22,086,000, including general sales, \$6,152,000, motor fuel, \$11,968,000. Taxes on specific businesses and occupations (1940) ran to \$1,520,000, general and selective property taxes, \$3,282,000, and unemployment compensation (1941), \$3,416,000. The net income taxes in 1941 were \$961,000. Cost payments for the operation of general government totaled \$23,006,000 in 1939, the latest year available. (Revenues for the general government for that year were \$41,063,000.) Cost of operation per capita was \$11.88. Total gross debt outstanding in 1941 was \$149,413,000, as compared with \$164,626,000 in 1932.

Officers and Judiciary. The Governor is Homer M. Adkins (Dem.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, Robert Bailey, Secretary of State, C. G. Hall; Attorney General, Jack Holt, State Auditor, J. Oscar Humphreys; State Comptroller, Murray B. McLeod. Chief Justice of the Arkansas Supreme Court is Griffin Smith; there are six associate members elected by popular vote for eight-year terms.

See FLOODS; PRISONS.

ARMAMENTS. See the topics listed under NATIONAL DEFENSE.

ARMENIAN SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

ARMISTICES. See WORLD WAR; ECUADOR, FRANCE, GREECE, IRAN, IRAQ, SYRIA, and YUGOSLAVIA, under *History*.

ARMORED FORCE. See MILITARY PROGRESS.

ARMY, U.S. See MILITARY PROGRESS and the topics there listed.

ARSENALS. See MOTOR VEHICLES.

ART. All activity in the field of art was speeded up in 1941. The art museums, to which the National Gallery of Art at Washington was an all-important

addition, expanded their facilities for display as well as their collections and serviceability to the public. More exhibitions were held than ever before, both of the works of old masters and of contemporary American artists, especial stress being placed on those of the latter under forty years of age. More commissions were given by the Federal Government for mural paintings and sculpture to decorate public buildings than in any previous year, and more emphasis was placed on wide-spread productivity—national output. During National Art Week, November 17–24, instituted for the second year by the President of the United States, exhibitions, over 1,000 in number, were held in every State of the Union under State and Federal auspices. The art market thrived and higher prices were brought for works of art sold at auction than for many years. The number of artists engaging professionally in print-making, sculpture, and painting showed considerable increase, despite economic conditions generally prevailing, and the art schools from coast to coast were overcrowded both winter and summer. The War which might have been expected to have a detrimental effect, to the contrary bestirred additional interest through exhibitions by those participating in warfare or held to raise relief funds. Perhaps, however, the most striking result of our country's isolation because of the World War was the more intimate relationship established through interchange of exhibitions between the United States and the South and Central American Republics.

The National Gallery of Art. The National Gallery of Art at Washington was formally dedicated and opened on the evening of Mar. 17, 1941. The Chief Justice of the Supreme Court presided at the ceremonies; the President of the United States made the dedicatory address; other speakers were Paul Mellon representing his father, the late Andrew W. Mellon, founder and donor, and Samuel H. Kress, also donor. Over eight thousand invited guests were in attendance; many from out-of-town, as well as those prominent in art, official, and diplomatic life at the National Capital. There was music by the Marine Band's Symphony Orchestra, and the two garden courts were decorated by more than five hundred blossoming acacias from the conservatories of Joseph E. Widener, one of the trustees, and well known collector.

Never before did a National Gallery of Art come into existence so well stocked and endowed. In the Mellon Collection there were 126 paintings covering all the great European Schools from the 13th to the 19th centuries, besides some early American paintings and 26 works in sculpture from the Italian Renaissance. The Kress Collection, limited to the art of Italy, comprised 375 paintings and 18 works in sculpture, dating from the late 13th to the early 18th centuries, and representing the Italian Schools as in no other museum in America and few abroad. Before the opening, Mr. Kress added 43 additional paintings and 22 pieces of sculpture to the gift collection, as indefinite loans. Also prior to the opening a superb collection of 300 prints from the earliest days of print-making to today was received from Miss Ellen T. Bullard and three anonymous donors, a selection of which was immediately placed on view, as was a group of early American portraits lent by Mr. and Mrs. Chester Dale.

Other important gifts and loans followed in quick succession. *Advice to a Young Artist*, a painting by Daumier, was presented by Duncan Phillips, and a portrait of *Don Bartolomé Surega*, by Goya, came as a gift from Mr. and Mrs. P. H. B. Freling-

huysen in memory of Mr. and Mrs. H. O. Havemeyer to whom it had belonged. Among the indefinite loans were: Whistler's *White Girl*, *Andalusian*, and a marine, *The Sea*, as well as two paintings by Degas and two by Renoir, all from the Whittemore Collection; from the Chester Dale Collection, 25 paintings by the leading French artists of the 19th century—David to Cezanne; and from Mr. and Mrs. Copley Amory the famous portrait of *The Copley Family* by Copley himself.

The galleries in which the paintings and a majority of the sculptures are exhibited are on the main floor opening from the two spacious halls, 100 feet long by 21 feet wide, which extend east and west from the great rotunda to the garden courts at either end. The arrangement is chronological and by countries, and, although the Mellon and Kress Collections are given separate galleries, the historical sequence is unbroken. Great care has been taken to provide appropriate backgrounds for the paintings. Thus the early Italian paintings are seen on plaster walls and those of a later period against damask. The Dutch and Flemish paintings hang on oak panels; the 18th century English, French, and American on wood panels painted, as was the custom of their time. The floors are dark oak; the lighting from above, well modulated.

On the ground floor are the administrative offices, auditorium, library, work and storage rooms, cafeteria, etc. Here also are a number of adjustable galleries in which from time to time exhibitions of the works of living artists may be shown, as well as study collections. The first showing in these galleries was of water colors acquired by the Section of Fine Arts, Public Building Administration, for placement in U.S. Marine hospitals; followed shortly by an exhibition of the "Art of Australia," sent to this country by the Australian Commonwealth under the sponsorship of the Carnegie Corporation of New York. The National Gallery of Art is administered by a specially appointed board of trustees under the Smithsonian Institution, with major administrative costs met by Congressional appropriation. David K. E. Bruce is President of the Board of Trustees; Donald D. Sheperd, Secretary and Treasurer; Harry A. McBride, Administrator; David E. Finley, Director, Macgill James, Assistant Director; John Walker, Head Curator, and Charles Seymour, Jr., Curator of Sculptor.

The attendance during the first three months exceeded one million.

Federal Patronage. From June 1 to Dec. 31, 1941, the Section of Fine Arts, Public Buildings Administration, Federal Works Agency, of which Edward Bruce is Chief, held thirty competitions for mural paintings and sculpture to decorate new Federal buildings not only in Washington but throughout the United States. These were all anonymous and judged by advisory juries composed of artists of high professional standing. The payment for these paintings and works of sculpture was on the basis of 1 per cent of building cost. The more important paintings therefore were for the buildings of greatest size and cost, among which are the new War Department Building in Washington, D. C., and the Los Angeles, Calif., Terminal Annex Post Office.

While these great buildings give opportunity for decorative composition on an imposing scale which are particularly rewarding to the artists, the Section of Fine Arts places great importance on the less sizeable projects which take art under government patronage to small communities in every section of the country. During the year no less than 240 commissions for mural paintings and sculpture were

completed, with 268 still in process. The total number of mural paintings and sculpture completed, under these auspices since Oct. 16, 1934, when the Section of Fine Arts was set up is 1,044, and the number of cities in which these may now be found is 894.

The WPA, under Holger Cahill, in cooperation with States, cities, and towns which have shared costs, has carried on an extensive work for the advancement of art and artists, conducting art centers, exhibitions, classes, and buying indigent artists' works. It has also added to the excellent "Index of American Design," and has undertaken the organization and conduct of "National Art Week" during which through numerous exhibitions all over the country, a high pressure campaign for the sale of works by local artists was put on in the hope of creating a stable market. The slogan was "A Work of Art for Every American Home," but nothing was said of merit. Thomas J. Watson was appointed National Chairman of National Art Week and Mrs. Eleanor Roosevelt served as Honorary Chairman. The dates were November 17 to 24.

Art and War. Art seems to have been accelerated rather than slowed down by war. This acceleration has shown itself in exhibitions by "Soldier Artists," as that officially opened in New York in May, and by exhibitions of masterpieces set forth for the purpose of raising funds for relief.

A collection of paintings, "Britain at War," by British artists, which was assembled under distinguished supervision in London, opened in this country in the Museum of Modern Art, New York, with the British Ambassador, Lord Halifax, in attendance and speaking. Smaller exhibitions of contemporary British art were also shown in the British-American Art Center, New York, and the Phillips Memorial Gallery, Washington, D.C.

One hundred and six paintings by British artists, serving as firemen, all depicting fires set by German bombs, which were selected by a group of experts in cooperation with the Director of the National Gallery of London, were shown first in the National Gallery of Art, Washington, then in New York, and later in Canada. The attendance at this exhibition in Washington was 150,000.

The American Academy of Arts and Letters and the National Institute of Arts and Letters, New York, appropriated \$5,000 for the purchase of paintings by British artists serving in the war, to be brought to this country and resold, in order that more works might, in like manner, be brought overseas. The number of paintings purchased was 35. If not all sold within reasonable time those remaining will be distributed to American Museums.

Among the notable exhibitions held for relief purposes were the following, all in New York City: Early American Paintings, for Bundles for Britain, twenty-five paintings by El Greco from private collections, for Greek Relief, eighty paintings by Renoir, public and private loans, commemorating the centenary of the artist's birth, for the benefit of the Free French. Mention should also be made of the sale of contemporary works of American art, held at the Ritz Tower Hotel, for the benefit of Chinese war orphans.

The comprehensive exhibition of "Australian Art" sent to this country by the Commonwealth of Australia, under semi-official auspices, and the exhibition of American paintings by contemporary artists sent to and shown in Cape Town, South Africa, may both be regarded as tokens of international good-will in a world torn by hate.

The American Academy in Rome, being closed, and travel abroad impossible, competitions for prize awards open to painters—unmarried men under thirty—were conducted in 1941, in lieu of fellowships. Preliminary competitions were held in six different sections of the United States and final awards made upon the basis of competing regional winners.

By the end of 1941 the painters began having difficulty in securing certain desired pigments; the etchers in obtaining copper plates, and the sculptors in buying bronze metal.

Latin America. Sponsored by the Coordinator of Cultural Relations between the American Republics, a collection of 300 paintings (200 oils and 100 water colors) was assembled by the Metropolitan Museum of Art, the Museum of Modern Art, the Whitney Museum, and the Brooklyn Museum, working in cooperation. Three groups of approximately 100 paintings each were arranged and sent out on tours to cities of Central and South America. The first group began its tour at Buenos Aires; the second, a little later, at Mexico City, and the third, later still, at Santiago, Chili. Collectively, the three visited most of the important Latin American cities and were everywhere enthusiastically and cordially received.

In addition to these government sponsored groups, an exhibition of "Contemporary Paintings of the Western Hemisphere," assembled by the International Business Machines Corporation, was sent out early in May to visit sixteen National Museums and Departments of Fine Arts in practically the same territory. This opened in Rio de Janeiro in June; it comprised 93 paintings and 150 prints, and was sent, free of expense, to the places that showed them. Almost all of the exhibits included therein had been purchased of the artists by the I.B.M. Corporation.

At the Nation's Capital the Pan American Union has rendered excellent service by showing in its handsome building a succession of exhibitions of the Arts and Crafts of Latin American Countries. Among those of special note were prints from Uruguay, craft work from Mexico, a rare and extensive collection of hand-wrought silver from South American countries, and 200 water colors of ancient Peruvian Arts by a distinguished archeologist, Dr. Constantino Malinovsky.

Other exhibitions of contemporary Latin American art were brought to Washington through diplomatic channels. The works of two South American sculptors were shown, one in the Pan American Union, the other in the Corcoran Gallery of Art; the former, by Marino Nunez del Prado of Bolivia, the latter by Maria Martins, wife of the Brazilian Ambassador.

Under Governmental auspices and appropriation, there has been an interchange of students and scholars between the United States and Latin American countries. But perhaps the best "ambassadors of good-will" have been artists of the United States and the Republics to our south, who, traveling independently and practicing their art, have been most successful in breaking down prejudice and creating neighborly cordiality.

Art Museums. A new Art Museum was opened in Santa Barbara, California, on June 5, 1941, with an exhibition entitled "Painting Today and Yesterday," consisting of 140 works by American artists. The building was the old Post Office, purchased from the Federal Government by the County of Santa Barbara, and reconstructed. Two stories high, it has six galleries, a sculpture court, music room, auditorium, kitchen, as well as offices and work rooms.

The sculpture court and several of the galleries were given by individuals. At the opening \$50,000 for administrative purposes was pledged by charter patrons and valuable bequests were assured.

On November 1 the Philadelphia Museum of Art opened twenty new galleries in which paintings from the J. G. Johnson collection were placed on view. This famous collection comprises over 1,200 works from the 12th to the 19th centuries.

An important gift received by the Philadelphia Museum during 1941 was a suite of furniture designed by Robert Adam, about 1766, for Sir Lawrence Dundas of Moor Park, Hereford, England.

The Metropolitan Museum of Art, New York, redecorated and rehung, in chronological order, a large number of its picture galleries, exercising selective choice with regard to works placed on display in order to uphold high standards and prevent overcrowding. In the autumn this Museum also established a Junior Museum, setting aside five rooms on its first floor for this purpose, wherein under trained supervision special exhibitions, programs, art work, etc. are made available to approximately one thousand young visitors a day.

From Thomas J. Watson, a trustee, the Metropolitan Museum of Art received as a gift an extensive broadcasting system to be used principally for educational work within the Museum but capable of tuning in with outside. So extensive is this system that its installation will take nearly a year.

On the death of George Blumenthal, June 26, 1941, the one million dollar fund, which during his Presidency he had given the Metropolitan Museum under certain restrictions, became available for the purchase of works of art. He had also bequeathed to the Museum his home in New York City and all of his art properties, dated earlier than 1720, certain pieces excepted, which were left for life to his wife.

Among other important acquisitions made by the Metropolitan Museum of Art this year were a wainscoted study from the palace of Frederigo da Montefelto, Duke of Urbino, which was handsomely installed; and the furnishings of the Samuel Verplanck drawing room, given by descendants and installed in appropriate setting in the American Wing.

The Cloisters—branch of the Metropolitan Museum of Art—received from John D. Rockefeller, Jr. a 15th century doorway for the tapestry room and a small limestone statue of Mary Magdalene.

The Metropolitan Museum of Art, the Brooklyn Museum, and the Museum of Modern Art, New York, as well as the Cleveland Museum abolished pay days this year under the conviction that everything should be done to keep up interest in cultural things during the blackout in Europe. The Cleveland Museum also announced two evening openings each week.

A "Provisional Exhibition Gallery" was established by the Museum of Fine Arts, Boston, toward the close of the year. In this gallery will be displayed contemporary works by living artists acquired by the Museum "on trial," and which will not be considered a part of the permanent collection until sufficient time has passed to prove their worth. In December this museum placed on permanent view a collection of 18th century American Arts, given by Mr. and Mrs. Maxim Karolik of Newport, R.I., consisting of 250 objects—furniture, textiles, glass, silver, pottery, paintings, prints, and drawings—fine in design and workmanship, assembled on a purely esthetic basis during a considerable period by the donors in close cooperation with the Museum's representatives.

The J. B. Speed Memorial Museum, Louisville, Ky., received from Dr. Preston Pope Satterwhite, formerly of that city, a collection of art objects from the Gothic Period to the 18th century, and handsomely installed it in two large galleries set aside for its permanent display.

The M. H. De Young Memorial Museum, San Francisco, acquired and set up in adjacent Golden Gate Park a Spanish Monastery purchased and brought to this country by William Randolph Hearst in whose collection, dispersed in 1941, it was included.

An Art Gallery and School, costing \$250,000, together with a collection of 100 contemporary English and American paintings and funds for operation, were given to Palm Beach, Florida, by Mr. and Mrs. Ralph H. Norton, of Chicago. Included in the gift were sculptures by Paulanship—replicas of his *Acteon* and *Diana*—placed on either side of the entrance, and a panel in relief on the façade.

The William Rockhill Nelson and Atkins Museum, of Kansas City, Mo., added six new galleries in April, greatly increasing its display space.

As a bequest from James M. Hamilton, architect of Cleveland, the Art School and Museum of Ft. Wayne, Ind., received \$150,000 and an art collection which he had assembled.

The Rochester Memorial Art Gallery was given, by R. T. Miller, Jr., \$25,000, part of which, it was stipulated, should be used for the acquisition of American furniture of the Classical Revival Period and the remainder for American paintings.

The Philbrook Art Museum, Tulsa, Oklahoma, opened a new auditorium and a glassed-in terrace in October, both the gift of the museum donors, Mr. and Mrs. Waite Phillips who donated \$50,000 to meet the cost.

A building to be devoted to Art, Music, and the Drama was erected at a cost of \$300,000 for the use of the Department of Art of the University of Georgia, at Athens, Ga.

In 1941 a small art museum, sponsored by the Boise Art Association, was built at Boise, Idaho. It is 108 ft. by 36 ft., simple but dignified in design, and built of native sandstone quarried by WPA workers.

Flint, Mich., in 1941, opened an art museum with an exhibition entitled "Art Marches On," made up of objects from public and private collections showing the development of art through the centuries.

The Mulvane Art Museum and also the Art Department of Washburn College, Topeka, Kansas, were taken over by the city to be henceforth supported from municipal funds as city institutions.

The little gallery of Early Christian and Medieval Art, which at *Dumbarton Oaks*, on Georgetown Heights, Washington, D.C., houses the Bliss Collection, now owned and administered by Harvard University, has been opened freely to the public, as well as the Research Library in connection therewith.

Acquisitions. Among the most important acquisitions made by art museums in 1941 are the following: A painting by Rubens, illustrating a dramatic scene from Herodotus, 80" by 121" in dimensions, recently owned by the Earl of Harewood, acquired by the Museum of Fine Arts, Boston; *Madonna and Child* and also *Beggar Boy*, by Murillo, and *Returning from Work*, by Jules Breton, the Carnegie Institute, Pittsburgh; *Les Demoiselles de Village*, by Courbet, and *Portrait of James Tissot*, by Degas, the Metropolitan Museum of Art; *Portrait of Artist's Brother*, by Vignée Le Brun, and *Christ and Wom-*

an of Samaria, by Veronese, the latter formerly in the Duke of Marlborough's collection, Blenheim Castle, acquired by the St. Louis City Museum; *The Infanta Margareta*, by Velasquez, and *Lady with Red Flowers*, by Barthel Bruyn, Elder, the San Diego Museum; *Les Trois Paniers*, by Derain, the Cincinnati Museum; and *Portrait of a Lady*, thought to be Condesa de Gondomar, by Goya, obtained by the Detroit Art Institute.

Art Sales. Taking into consideration the War, the consequent heavy increase in taxation, and the uncertainty of the future, it was surprising to learn, July 1, through the report issued by the Parke-Bernet Galleries, N.Y., America's largest Art Auction House, that receipts for the season, from Oct. 1, 1940 to June 30, 1941, were 54 per cent higher than for the same period of the preceding year, and, in fact, the highest for any Art and Book Auction House in the United States since 1929. The total amount was \$3,606,381.75. Also it was stated that many of the collections brought between 25 and 40 per cent more than the auctioneers' advance estimate. The attendance was large at these sales (140,000), among them were representatives of foreign museums, collectors, dealers, as well as, happily, a good many small buyers. The Plaza Art Auction House in New York reported sales covering the same period amounting to \$1,178,789—20 per cent higher than in the previous year. This upward tilt is explained by the statement that in times of critical international relations people commonly desire to invest money in personal property of permanent international value.

Some of the best known private collections in this country were dispersed in New York in 1941. Among them were those of Mrs. Henry Walters, Ralph Pulitzer, J. Horace Harding, Paul D. Cravath, Mrs. Walter P. Chrysler, Arthur Curtis James, and B. F. Jones.

The William Randolph Hearst collection of 15,000 art objects, assembled during 50 years, and long stored in warehouses, was offered for sale "over the counter" in two large New York department stores—Gimbels and Saks—the former giving a whole floor to it. Every piece was priced and plainly labeled, the range being from several dollars for a Staffordshire plate to more than \$100,000 for a Spanish Monastery. The Clarence Mackay collection was also offered for sale at Gimbels, as was that of Warner S. McColl, the latter consisting of 18th Century French and English masters.

The famous Stotesbury Collection, made up chiefly of works by the great British School, also came into the market. First shown and offered in a New York dealer's gallery, and afterwards sent out as a sales collection to the Pacific coast, where it was shown in two of the largest of the western art museums.

Of the collections sold at auction in New York by the Parke-Bernet Galleries, that of Mrs. Henry Walters brought the greatest amount, \$646,684, including, however, not only works of art but library. The collection of Mrs. B. F. Jones, Jr., the next in total value, realized \$463,520 for 112 paintings. The paintings and art property from the J. Horace Harding estate sold for \$183,152. At the Arthur Curtis James sale 40 paintings fetched \$44,305.

The highest price paid for a single painting was \$39,000 given at the Jones' sale for Hoppner's portrait of *Miss Frances Beresford*. Next highest was \$34,000, for a portrait of a child, *Victor Guye*, *Nephew of J. Nicholas Guye*, by Goya, which was included in the Harding collection. In the Jones' collection a portrait by Romney of *Capt. Wm. Kirkpatrick* brought \$31,000, Hobbema's *View in*

Westphalia, \$30,000, *Rt. Hon. Wm. Pitt* by Gainsborough \$26,000, and *Little Artist* by Romney \$25,000. In the Harding collection Reynolds' portrait of *Mrs. Freeman, Jr.* brought \$15,000. Gainsborough's portrait of *Mrs. Fitzherbert* \$11,000, and *Pastoral Landscape*, by the same artist, \$13,000. Other top prices for the year were: \$16,500 for *Le Moulin* and *Le Cours d'Eau*, by Boucher; \$12,500 for a portrait by Romney of *Lady Prescott and Her Three Children*; \$12,500 for *Blind Man's Buff*, by Fragonard; \$12,000 for *Mrs. Scott Moncrieff*, by Raeburn; \$9,750 for *Portrait of Child in Blue*, by Renoir; \$12,000 for a marble bust of Voltaire, by Houdon, and \$12,500 for a small terra cotta *Nymph and Satyr*, by Clodion.

Selling in London was reported, even during the blitzkrieg, as surprisingly good, especially for paintings by the masters of the British School. The National Art Collections Fund made several purchases of exceptionally fine works for British museums which would seem to indicate and induce confidence in eventual restoration of peace.

Exhibitions. Exhibitions increased in number and importance in 1941 and were of many kinds. The Art Museums of this country have long since accepted the transient exhibition as essential to interest and many of those organized under such auspices were of great educational value.

Within this category during 1941 were "Coptic Art," held in the Brooklyn Museum; "Portraiture Through Forty-five Centuries," set forth by the Museum of Fine Arts, Boston; "The Italian Baroque," shown in the Palace of the Legion of Honor, San Francisco; "The Art of the Third (French) Republic," assembled and displayed first in the Worcester Art Museum and later in San Francisco. The Art Institute of Chicago not only showed an impressive exhibition of paintings, prints, and drawings by Goya, made up of loans from museums and private collections in the United States and Canada, but also during the course of the exhibition held a seminar at which five scholars gave learned discourses on Goya's art. An exhibition of "Spanish Painting from the Twelfth Century to Goya" was held in the Toledo Art Museum, assembled by Jose Gudiol, formerly director of the Episcopal Museum at Vich, Spain.

Two important exhibitions of "refugee" paintings were on circuit in the United States in 1941. One of these consisted of French paintings which had been sent to Argentina as a gesture of good will by the Daladier Government and forwarded from there to San Francisco with the permission of the Government at Vichy. This consisted of 180 paintings of the 18th, 19th, and 20th centuries, from the Louvre, Petit Palais, Carnavalet, and provincial museums as well as private collections. After being shown in San Francisco, with an attendance of over 105,000, the collection was divided and about half was sent to the Metropolitan Museum, N.Y., where more works by artists of the same school, lent by American collectors, were added. The other half went to the Los Angeles Museum for the summer.

The second "refugee" collection on circuit, consisted of 38 works from three of the greatest art museums in the world—the Louvre, Paris; National Gallery, London; and the Rijks Museum, Amsterdam, which had been lent to the two World's Fairs on our east and west coasts in 1938 and 1939 and could not safely be returned because of the war. This collection, organized by Dr. Valentiner, director of the Detroit Institute of Art, after visiting 11 cities, from Massachusetts to California, with a final showing in Detroit, was placed in storage for the duration of the war.

The interest evidenced in the works of painters of the past did not seem to interfere with or discount that in Modern Art. For example, the Picasso Exhibition, organized by the Museum of Modern Art, New York, and the Art Institute of Chicago, after visiting eight cities and coming to a close in Minneapolis, was found to have been viewed by 370,000 persons. In March the Museum in Los Angeles put on an exhibition "From Cezanne to Picasso," which in part covered the same ground. Meanwhile "The Rouault Exhibition," which originated in Boston, late in 1940, then went to the Phillips Gallery, Washington, to San Francisco and back to New York, attracted almost as much attention.

In the Virginia Museum, Richmond, from mid-January to March, the collection of modern paintings, sculpture, and drawings, assembled by Walter J. Chrysler, an ardent exponent of this school, was shown, for the first time. The purpose of this display, as stated by Thomas C. Colt, Director of the Museum, was "to provoke dissension, discussion and reevaluation," all of which it was said to have accomplished. Following the exhibition in Richmond the collection was displayed in the Philadelphia Museum.

A novel, engaging, and very serviceable exhibition was that entitled "The China Trade and Its Influence," shown during the summer in the Metropolitan Museum of Art. This consisted of paintings, sculpture, prints, textiles, porcelains, lacquer, etc., and illustrated the impact of Eastern culture on the art of the West.

While much emphasis was placed on the art, past and present, of other countries, that of America today was by no means forgotten. In fact it was especially brought to attention by innumerable exhibitions in every conceivable place that works of art could be shown. First in importance came the regular exhibitions of the artists' professional organizations, such as the Pennsylvania Academy of the Fine Arts, National Academy, New York, the various water-color clubs and societies, etc., as well as institutions like the Corcoran Gallery of Art, the Whitney Museum, and the Art Institute of Chicago. In all of these annual exhibitions young artists were especially favored. The Whitney Museum, toward the latter part of the year, held an exhibition which consisted solely of works by "Young American Artists Under Forty." The Carnegie Institute in place of its International Exhibition, impossible because of world conditions, set forth in October an exhibition illustrating "New Directions in American Art" which consisted of 302 paintings by as many artists selected from 5,000 submitted from all parts of the country.

At an open air exhibition held in San Francisco, in which 500 contemporary artists were represented by 1,000 works, many sales were reported. Other open air exhibitions were held with success by local artists in Washington, D.C., and in New York.

A large exhibition of sculpture by Carl Milles, formerly of Sweden, now of Bloomfield Hills, Michigan, was first shown in Baltimore, then in New York and elsewhere, attracting much attention.

For a decade, annual exhibitions of Ceramics have been held in the Syracuse Art Museum. This year this museum, in cooperation with the International Business Machines Corporation, organized and sponsored the "First Exhibition of Ceramics of the Western Hemisphere," in which were shown works from all parts of the United States, Latin American countries, Canada, and little Iceland. Over one thousand dollars was distributed in prizes; all the exhibits from Latin America were pur-

chased, and arrangements made for the circulation of the entire collection among American museums.

Twenty-five water-color drawings by William Blake to illustrate Bunyan's *Pilgrim's Progress*, lately discovered in England, were exhibited for the first time anywhere at Knoedler's in New York (prior to reproduction by the Limited Editions Club), for the benefit of two British relief organizations.

Painting. The impetus given mural painting through commissions awarded by the Government for Federal buildings continued to bear fruit as well as to focus attention on this branch of art. Some imposing commissions were given privately as well. On May 28, 1941, a great painting nearly 100 feet long by 25 feet high, commemorating the first World War, was unveiled in the Worcester Municipal Auditorium, Worcester, Mass. It was the work of Leon Kroll, assisted by Claude Domoe and Nicholas Carone, and represented the *Dream of Life set in Idyllic Landscape*.

Of great artistic importance are the murals by Ezra Winter in the Jefferson Memorial Reading Room, Library of Congress Annex, dedicated on "Bill of Rights Day." These murals, which were commissioned by the U.S. Congress in 1939, illustrate quotations from Jefferson's writings concerning democracy and life in the new republic.

Barry Faulkner, a former Fellow of the American Academy at Rome, was commissioned by the trustees of the Edwin A. Abbey Memorial Trust Fund to paint four mural panels illustrating State history for the State Capitol of New Hampshire. This was the first award made under this fund. Jose Maria Sert, Spanish painter, was commissioned to complete a series of murals in the main hall of Rockefeller Center, New York, and also to replace those destroyed in Vich Cathedral, near Barcelona, Spain. Diego Rivera, who was obliged to flee Mexico to escape the bullets of assassins in 1940, was recalled by the Mexican Government in 1941 to paint a 3,600 square foot mural in the National Palace. An interesting and successful experiment in the painting of murals on wall paper was tried by Hildreth Meiere and a group of associates when decorations of this order were desired for the Navy Y.M.C.A. at Norfolk, Virginia.

A surrealist portrayal of the *Story of Boston* by John G. Wolcott was unveiled in the lobby of the Park Square Building of that city during the summer of 1941.

The Popular Prize in the Corcoran Gallery of Art's Biennial Exhibition was voted to a *Portrait of John La Farge*, by Luigi Lucioni.

The American Water Color Society and the New York Water Color Club merged in 1941 after holding their regular Annual Exhibitions.

American Negro Artists held a 5th Annual Exhibition of members' works sponsored by Dillard University, New Orleans, April 17-May 10.

Prints. Four large and valuable collections of prints were given to public institutions in this country in 1941: (1) The collection of 300 given to the National Gallery at Washington by Miss Ellen T. Bullard and three anonymous donors illustrating, by fine examples, print-making from the earliest day of the art to the end of the 19th century. (2) The still larger collection assembled by Albert H. Higgins (formerly President of the Chase National Bank) and given by him to the Public Library of Boston, on which special emphasis is placed upon the work of the 20th century print-makers, some of whom are represented by their complete output. With this collection went several thousands of books on prints. (3) A selection of 228 prints from

the notable collection assembled by the late Felix M. Warburg, given by his widow and children to the Metropolitan Museum of Art on the seventieth anniversary of his birth. (4) A collection of nearly 2,000 fine prints from the 16th to the 20th century, given to the Huntington Library, California, by a member of "The Friends of the Library."

An extraordinarily fine private collection, that of Herbert Greer French, a trustee of the Cincinnati Institute of Fine Arts and Curator of Prints of the Cincinnati Art Museum, consisting of 236 examples from the 15th through the 18th centuries, was shown in the Cincinnati Museum in October.

An exceptionally fine exhibition of prints by Callo was held in the Grolier Club, New York; and at the Art Institute of Chicago an exhibition of prints of the 14th and 15th centuries, illustrating "The First One Hundred Years of Print-Making," was set forth.

A collection of 200 prints by Currier & Ives, 146 of which were of race horses and 10 of "The American Fireman and his Life," was given to the United States Museum by Miss A. S. Colgate.

Yale University gave to the John Heron Institute a set of twelve dry points of Yale buildings by Samuel Chamberlain.

The International Business Machines Corporation, through its president, Thomas J. Watson, purchased for exhibition purposes a collection of 101 prints assembled by John Taylor Arms, Chairman of the National Committee on Engraving, illustrating, at its best, "American Print-Making Through 300 Years."

The National Committee on Engraving was very active in 1941 assembling and circulating exhibitions and arranging the interchange of exhibitions of prints between the United States and Latin America. The Committee also sponsored an exhibition of prints by British artists in service.

The interest in prints seemed to be more widespread than before, print exhibitions were in great demand; more prints were produced and more were sold. One hundred fifty prints were purchased from the Society of American Etchers' Annual Exhibition during the first two weeks it was open. Print societies apparently flourished and their number was increased. Located in all parts of the United States, these societies do much to encourage print-making and, through the issuance of prints to lay members, induce collecting. Among the societies issuing prints by contemporary print-makers for distribution were The Society of American Etchers, the Chicago Society of Etchers, California Print-Makers, American College Society of Print Collectors, Prairie Print-Makers, Southern Print-Makers, Wood Block Society, and Friends of Contemporary Prints. An addition to this list was the Miniature Print Society, formed in 1941, with headquarters in Kansas City, which distributes not one but three prints a year to its members.

The Division of Fine Arts, Library of Congress, steadily added, through purchase from the Pennell Fund, to the collection of prints by contemporary print-makers. The number of such purchases was approximately 450. The Library of Congress received from Cadwallader Washburn, distinguished etcher, a collection comprising 101 of his own fine dry points.

Sculpture. Toward the close of 1941, through a series of three competitions, Rudolph Evans, sculptor, was awarded the commission for the statue of Thomas Jefferson to be placed in the rotunda of the new Jefferson Memorial at Washington, D.C. This monumental building, designed by the late John Russell Pope, was completed in November,

1941, and will be dedicated early in 1942, but the statue will not, it is thought, be ready for placement before the 200th anniversary of Jefferson's birth, Apr. 13, 1943. It will be in bronze, 18 feet in height, and shows Jefferson at about the age of 60, standing with head erect, arms dropped at his sides, holding in his left hand a folded manuscript. His dress is that of the period with the traditional fur-trimmed overcoat. The types followed are those of the Houdon portrait bust and the Sully painting, both of which were done from life. Evans is a Washingtonian by birth, but has long maintained a studio in New York. He is represented in the Luxembourg Museum, Paris, the Metropolitan Museum of Art, and numerous other public and private collections.

As an outcome of the International Exhibition of Sculpture, held under the auspices of the Philadelphia Museum in the summer of 1940, five sculptors in 1941 were awarded commissions for sculpture to be placed in Fairmount Park by the Fairmount Park Art Association. Four of these, Harry Rosin, Henry Kreis, Edwin F. Frye, and Wheeler Williams were selected to create groups or figures to form the second unit of the Ellen Phillips Samuel Memorial on East River Drive, and the fifth, Paul Manship, to design and model a memorial to Pennsylvania aviators who died in World War I.

A huge granite frog, weighing 1,800 lbs., carved by Cornelia Van A. Chapin, set on a pedestal designed by Paul Cret, was acquired through public subscription by the Philadelphia Print Club and permanently placed in Rittenhouse Square adjacent to the Club's headquarters.

Henry Warnecke was commissioned by the Class of 1940, Pennsylvania State College, to carve a lion (from Indiana limestone) for the campus, the carving to be done when and where the students could watch its progress.

A site for an equestrian statue of General Longstreet was ceremoniously dedicated at Gettysburg, and announcement was made that Paul Manship would be the sculptor.

A full length statue of Huey Long, by Charles Keck, was placed in the Capitol of the United States as representing an outstanding citizen of the State of Louisiana.

Comparatively few commissions for monumental sculpture were given in 1941, other than those awarded through competitions by the Section of Fine Arts, Public Buildings Administration, at Washington. That the sculptors themselves were eager and active was manifested by the fact that for one of these competitions for large sculptural groups to be placed on either side of the main entrance of the new War Department building, four hundred models were submitted by sculptors from all parts of the country.

The Society of Medalists, in its twelfth year, as usual distributed two medals to its constituent membership, one by Joseph Renier, the other by Irwin Springweiler.

A "Medal of the Month Club" for boys and girls of school age was founded. As its name signifies, each member received a medal a month. The first of these was by Brenda Putnam and showed, in low relief, a portrait of Amelia Earhart.

Several notable exhibitions of sculpture were held during the year; possibly first in importance that of the works of living American sculptors, held at the Carnegie Institute, Pittsburgh, in February. An outdoor sculpture exhibition was held by the Sculptor's Guild, in New York, as usual, but in Greenwich Village, instead of, as heretofore, in the heart of the business district. This comprised 100

works by 65 sculptors. Demonstrations were given to create interest and inform the public. A successful outdoor sculpture exhibition was held under the auspices of the Art Alliance in Rittenhouse Square, Philadelphia. A noteworthy exhibition of sculpture in terra cotta, especially purposed for garden decoration, was held in New York City. Owing to the shortage of metal required for armament, etc., many sculptors in 1941 turned to other media than bronze for expression.

Civic Virtue, by Frederick MacMonnies, was removed from City Hall Square, Manhattan, where it had never found favor, and set up opposite Queensborough Hall in Kew Gardens to the great satisfaction of those especially concerned.

The second collection of early Romanesque and Gothic sculpture assembled by the late George Grey Barnard was placed on sale in May, 1941, in the "Little Cloisters" which he himself had built, the purpose being to finance the erection of the *Rainbow Arch, Monument to Peace* which he considered the consummation of his life's work. The collection comprised 260 items, priced from \$10 to \$175,000.

The carving of colossal portrait heads of Washington, Jefferson, Lincoln, and Theodore Roosevelt in high relief on the rocky heights of Mt. Rushmore, North Dakota, was halted when nearing completion, by the death, on March 6, of the sculptor, Gutzon Borglum. They will be completed, it was announced, by his son, who for some time had been working with him.

See ACADEMY OF ARTS, ROYAL; ACADEMY OF DESIGN, NATIONAL; ACADEMY OF ARTS AND LETTERS, ARCHAEOLOGY.

LEILA MECHLIN.

ARTISTS. See ACADEMY OF ARTS AND LETTERS; ACADEMY OF DESIGN, ART; MUSIC; RADIO PROGRAMS.

ARUBA. See CURAÇAO.

ASBESTOS. The Province of Quebec continued to produce almost all of Canada's asbestos in 1941, and with only two exceptions all the asbestos mines and mills in the province were going at full speed throughout the year. Because of war conditions in both hemispheres Canada found herself minus her accustomed European markets and with Far Eastern markets rapidly vanishing. Yet the rising demand for asbestos in the United States was enough to meet these losses. The United States war program called for ever increasing amounts of asbestos for brake bands and clutch facings for all kinds of motor transport equipment. The United States imported from Canada 50 per cent more asbestos than in 1940, when the figure was 225,856 short tons imported, including blue fiber and mill and short fibers. Canada's 1940 total production figure was 345,581 tons.

According to the U.S. Minerals Year Book, 19-174 short tons of asbestos were produced in the United States in 1940. Domestic production was centered chiefly in the extensive deposits of slip fiber near Hyde Park, Vermont. Small quantities also were mined in Arizona, Georgia, Maryland, and North Carolina. Prices remained constant throughout 1941, but a 10 per cent increase was slated to go into effect as of Jan. 1, 1942.

ASCENSION ISLAND. See BRITISH EMPIRE.

ASHANTI. See GOLD COAST.

ASHMORE AND CARTIER ISLANDS. See AUSTRALIA under *Overseas Territories*.

ASIA. Excluding the Asiatic part of the Soviet Union, the continent has an area of about 10,345,000

square miles and a population estimated at 1,134,500,000 on Dec. 31, 1938. See the separate articles on ARABIA, CHINA, INDIA, JAPAN, MANCHOUKUO, and the other Asiatic States and territories; also ANTHROPOLOGY, ARCHAEOLOGY, ETC.

ASIR. See ARABIA under *Saudi Arabia*.

ASSEMBLIES OF GOD, General Council of the. A religious organization incorporated in Arkansas in 1914 by a group of independent pastors interested in a distinctively evangelistic type of mission work. Headquarters, 336 W. Pacific Street, Springfield, Mo. For statistics, see RELIGIOUS ORGANIZATIONS.

ASSOCIATED PRESS. See NEWSPAPERS AND MAGAZINES.

ASSOCIATIONS. See SOCIETIES AND ASSOCIATIONS.

ASTRONOMY. The largest group of sunspots since January, 1940, crossed the sun's disk between Sept. 10 and 23, 1941. The group was a complex stream of spots some 150,000 miles in length. At central meridian passage on September 16 8 G.M.T., the center of the group passed within 4 degrees of the center of the sun's disk. Thus the earth was in a favorable position to be affected by a corpuscular stream that might be shot out from this disturbed region within a day or two of September 16. Statistical data of sunspots and magnetic storms show that out of every 10 sunspot groups of great size seven groups are associated near the time of their central meridian passage with a magnetic storm, the mean position of the group at the time of the commencement of the storm being about one day past the central meridian. In the present case a brilliant eruption was observed at Greenwich on September 17 at 8½ hours. About 20 hours later a magnetic disturbance began. This storm was one of the most intense in the present solar cycle. The maximum sunspot frequency occurred in 1937-38. This sunspot was accompanied by very brilliant auroral displays over most of the United States. See PHOTOGRAPHY under *Applied and Scientific*.

Jones has announced a new determination of the solar parallax. In 1930-31 Eros came within 16,200,000 miles of the earth. No equally favorable approach will occur for a long time to come and the planet was extensively observed. In recent years two or three tiny asteroids have been discovered which at times come much nearer to the earth than Eros but it is doubtful whether they will be more valuable for the determination of the solar parallax. To begin with, these very near approaches depend upon an even closer coincidence of the time of passage of the earth and the planet through the right point on their orbits so that they will be very rare. Just because the approach is so close the planet stays near the earth for only a few days, while Eros can be followed for months. Finally the smaller bodies are so faint that even when close they can be photographed only with powerful instruments, while Eros under such circumstances is of about the same apparent magnitude as the stars which are used as reference points on the photographs and good images can be obtained with short exposures.

The general discussion of the observations of Eros in 1931 was placed by general agreement in the hand of H. Spencer Jones, Astronomer Royal, at Greenwich, who had proved his skill, thoroughness, and good judgment in handling masses of observations in several important investigations. The first announcement of the result was made to the

Royal Astronomical Society in June, ten years after the observations were completed. For this apparently long delay the war has at most a minor responsibility. The main reason is the great extent and laboriousness of the calculations. The solar parallax as determined by Jones is between 8.793" and 8.787", and gives the mean distance of the sun as 93,010,000 miles.

Comets during 1941. Comet 1941 (a) Friend was discovered January 17 by Clarence L. Friend at Escondido, Calif., and reached maximum brightness on February 15. Comet 1941 (b) was periodic Encke. The return of this comet was first observed by Van Biesbroeck on January 19 on plates exposed on the 24-inch reflector at Yerkes Observatory. Its position was within 3 feet of that predicted by A. C. D. Crommelin. This is the 40th reappearance of this comet which was discovered by Mehan in 1786 in France. Comet 1941 (c) Paraskevopoulos was a new comet first observed by him at Bloemfontein, South Africa, on January 23. It was also independently discovered by several others. It was visible to the naked eye to observers in the southern hemisphere. Observers in the southern hemisphere could see two naked-eye comets simultaneously, Cunningham's and this one (For an account of Cunningham's comet see the 1940 YEAR BOOK.) Comet 1941 (d) was Comet Schwachmann-Wachmann 1925 II, and was first observed April 30 by Van Biesbroeck at McDonald Observatory at Fort Davis, Texas. Comet 1941 (e) Van Gent was first observed May 27 at the Johannesburg Observatory in South Africa. It reached naked eye visibility at the end of June. Comet 1941 (f) Du Toit-Neujmin was first observed July 18 at Bloemfontein, South Africa, by Du Toit, and was also noticed by Neujmin at Simeis, Crimea, as well as Van Biesbroeck at the Yerkes Observatory and the Belgian astronomer Delporte at Uccle near Brussels. Delporte's dispatch was relayed to Harvard through the international clearing house for astronomical information at Copenhagen, which continues to function despite the war. Comet 1941 (g) Neujmin was first observed by Neujmin at Simeis, Crimea on September 9. See CHEMISTRY, PURE.

RICHMOND T. ZOCH.

ATHLETICS. See TRACK AND FIELD.

ATLANTIC, Battle of the. See NAVAL PROGRESS; WORLD WAR.

ATLANTIC DECLARATION. The following statement, signed by the President of the United States and the Prime Minister of Great Britain during their conference in the North Atlantic off the coast of Newfoundland early in August, was released to the press by the White House on Aug. 14, 1941:

The President and the Prime Minister have had several conferences. They have considered the dangers to world civilization arising from the policies of military domination by conquest upon which the Hitlerite Government of Germany and other Governments associated therewith have embarked, and have made clear the stress which their countries are respectively taking for their safety in the face of these dangers.

They have agreed upon the following joint declaration: The President of the United States of America and the Prime Minister, Mr. Churchill, representing His Majesty's Government in the United Kingdom, being met together, deem it right to make known certain common principles in the national policies of their respective countries on which they base their hopes for a better future for the world.

First, their countries seek no aggrandizement, territorial or other;

Second, they desire to see no territorial changes that do not accord with the freely expressed wishes of the peoples concerned;

Third, they respect the right of all peoples to choose the form of government under which they will live; and they wish to see sovereign rights and self-government restored to those who have been forcibly deprived of them;

Fourth, they will endeavor, with due respect for their existing obligations, to further the enjoyment by all States, great or small, victor or vanquished, of access, on equal terms, to the trade and to the raw materials of the world which are needed for their economic prosperity;

Fifth, they desire to bring about the fullest collaboration between all nations in the economic field with the object of securing, for all, improved labor standards, economic advancement, and social security.

Sixth, after the final destruction of the Nazi tyranny, they hope to see established a peace which will afford to all nations the means of dwelling in safety within their own boundaries, and which will afford assurance that all the men in all the lands may live out their lives in freedom from fear and want;

Seventh, such a peace should enable all men to traverse the high seas and oceans without hindrance;

Eighth, they believe that all of the nations of the world, for realistic as well as spiritual reasons, must come to the abandonment of the use of force. Since no future peace can be maintained if land, sea, or air armaments continue to be employed by nations which threaten, or may threaten, aggression outside of their frontiers, they believe, pending the establishment of a wider and permanent system of general security, that the disarmament of such nations is essential. They will likewise aid and encourage all other practicable measures which will lighten for peace-loving peoples the crushing burden of armaments.

FRANKLIN D. ROOSEVELT
WINSTON S. CHURCHILL

See GREAT BRITAIN and NETHERLANDS INDIES, under *History*; UNITED STATES under *The President, WORLD WAR*.

AUCTIONS. See ART under *Art Sales* For **AUCTION SELLING**, see **AGRICULTURAL COOPERATION**.

AUSTRALIA. A self-governing dominion of the British Commonwealth of Nations Capital, Canberra.

Area and Population. The area of the six States and two Territories, the census population of June 30, 1933, and the estimated population on Dec. 31, 1940, exclusive of aboriginals, are shown in the accompanying table

AREA AND POPULATION OF AUSTRALIA

States and Territories	Area in sq miles	Population	
		June 30, 1933	Dec 31, 1940
New South Wales	309,433	2,600,847	2,789,123
Victoria	87,884	1,820,261	1,918,774
Queensland	670,500	947,534	1,029,613
South Australia	380,070	580,949	598,091
Western Australia	975,920	438,852	468,311
Tasmania	26,215	227,599	243,057
Northern Territory	523,620	4,850	8,852
Aust. Capital Terr	939	8,947	12,868
Totals ..	2,974,581	6,629,839	7,068,689

The estimated population increase for the year 1940 was 71,363, of 13,400 represented net immigration and 57,963 the excess of births over deaths. At a census of aboriginals, taken on June 30, 1939, it was disclosed that there were 51,557 full-blood and 25,712 half-caste aboriginals in Australia. Vital statistics (1940): 128,347 births, 68,384 deaths, and 77,887 marriages. Estimated populations of the chief cities, all of them State capitals, on Dec. 31, 1939, were: Sydney, N.S.W., 1,302,890; Melbourne, Victoria, 1,046,750; Brisbane, Queensland, 326,000; Adelaide, South Australia, 322,990; Perth, Western Australia, 224,800; Hobart, Tasmania, 65,450. Canberra, the Federal Capital, had 10,420 inhabitants. Newcastle, N.S.W., had 104,485 inhabitants at the 1933 census.

Overseas Territories. The overseas territories under the Commonwealth's political control are shown in the table at the top of next column.

Education and Religion. Elementary education is free and compulsory. Less than 4 per cent of the adult population is illiterate. In 1938 there were 10,029 State schools and 934,990 students enrolled; 1,867 private schools and 249,497 students enrolled; 6 State universities and 12,126 students attending lectures, exclusive of 495 students in music conservatoriums. The 72 free kindergartens

AUSTRALIAN OVERSEAS TERRITORIES *

Territory (Capital)	Sq. mi.	Population
Australian Antarctic Territory ^b		
New Guinea, Territory of * (Lae)	93,000	633,821 ^c
Papua, Territory of * (Port Moresby) ..	90,540	338,822 ^d
Nauru ^e	8	3,492 ^f
Norfolk Island ..	13	983 ^g

* The Territory of Ashmore and Cartier Islands, situated in the Indian Ocean off the northwest coast of Australia, was placed under the authority of the Commonwealth of Australia by Imperial Order in Council of July 23, 1931. ^bThe Australian Antarctic Territory includes all the islands and territory, except Adèle Land, situated south of 60° S latitude, and between 160° E longitude and 45° E longitude. ^cMandated to Australia by the League of Nations in 1920. The Territory of New Guinea includes the Bismarck Archipelago (19,200 sq. mi.), North East New Guinea, also called "The Mainland" (69,700 sq. mi.), and Solomon Islands (4,100 sq. mi.) ^dIncludes Europeans, Asiatics, and natives enumerated on June 30, 1939, but does not include natives in unexplored areas. ^eFormerly called British New Guinea. ^fJune 30, 1940. ^gMandated to the British Empire by the League of Nations and administered under a joint agreement made by Australia, Great Britain, and New Zealand. ^hApr. 1, 1939. ⁱJune 30, 1939.

had a total average attendance of 3,376 in 1939. Religious affiliations at the 1933 census were: Church of England, 2,565,118; Roman Catholic, 1,161,455; Presbyterian, 713,229; Methodist, 684,022; Catholic (undefined), 127,542.

Production. The total area under crops for 1938-39 was 23,509,034 acres and the yields therefrom were 155,368,621 bu of wheat, 15,554,735 bu. of oats, 3,321,161 tons of hay, 7,056,642 bu. of maize, and 823,086 tons of cane sugar (923,621 tons in 1939-40). Preliminary figures for 1940-41 place the output of wheat at 83,848,000 bu. from 12,338,200 acres (210,283,681 bu. from 13,283,425 acres in 1939-40). Livestock in 1939 included 119,305,190 sheep, 13,091,175 cattle, 1,697,845 horses, and 1,453,653 swine. The wool clip for 1940-41 was estimated at 1,090 million lb. greasy (1,128,140,867 lb greasy in 1939-40). Butter produced in 1939-40 amounted to 477,150,130 lb.; cheese, 69,692,505 lb.; bacon and ham, 74,453,963 lb. for 1938-39.

In 1940 the production of gold (1,643,999 fine oz.) was valued at £17,492,025. The value of all minerals produced in 1939 was £36,838,814, including gold £16,002,472, coal (black and brown) £9,019,540, other minerals £11,816,802. Pig-iron production for the year ended June 30, 1939, was 1,104,605 tons. Production figures of copper, lead, silver, tin, and zinc (later than 1938) and pig iron (later than 1938-39) are not available for publication because of wartime restrictions. Manufacturing statistics for 1939-40 (preliminary): 27,000 establishments, 588,000 employees (including working proprietors), £115,000,000 for wages, £550,000,000—the value of output, and £220,000,000—the value added during production. See table in YEAR BOOK for 1940, p. 48, for total value of Australian production, and by industries, for the years ended June 30, 1937, 1938, and 1939.

Foreign Trade. For the fiscal year ended June 30, 1941 (in British currency values), merchandise imports were valued at £108,780,000 (£115,675,505 for 1939-40) and merchandise exports at £107,445,000 (£118,762,122). The principal 1940-41 exports (in Australian currency values) were wool (£39,646,000), wheat and flour (£16,675,000), meats (£15,818,000), butter (£11,973,000), sugar (£4,692,000), skins and hides (£4,105,000), and dried fruits (£2,495,000). Statistics of mineral exports are not available.

Finance. For the 1940-41 fiscal year the receipts and expenditures of the Consolidated Revenue Fund were estimated to balance at approximately £A150,470,738. Defense expenditures for 1940-

41 totaled £A169,857,000, of which £A101,211,000 came from loan, £A65,074,000 from revenue, and £A3,572,000 from trust fund. Budget estimates (1941-42): £A324,965,000 for revenue (£A163,227,000 on basis of existing taxation, £A22,000,000 from new taxation, £A2,229,000 from cash balance on hand at July 31, 1941, £A137,509,000 to be raised from loans); £A324,965,000 for expenditure (including £A221,485,000 for war expenditure). The Commonwealth public debt on Mar. 31, 1941, totaled £485,790,137 (£435,327,180 on June 30, 1940); total public debt of the States, £916,910,215 (£905,027,064). The £A (Australian pound) averaged \$3.5338 for 1939; \$3.0516 (free) and \$3.2280 (official) for 1940; British pound averaged \$3.8300 (free) and \$4.0350 (official), 1940.

Transportation. Federal and State railways in operation, June 30, 1940, totaled 27,251 miles; private (general traffic) lines, 721 miles. Gross earnings of the government lines amounted to £46,588,136; operating expenses, £36,368,089. Highways extended over 488,749 miles. Registrations of motor vehicles, Mar. 31, 1941, totaled 905,271. In the Northern Territory a new highway (600 miles long, costing £500,000) was completed during December, 1940. This new road joins Birdum (the southern terminal of the railway from Port Darwin on the northern coast of Australia) with Alice Springs (the northern terminal of the railway from Port Augusta, South Australia). During the year ended June 30, 1940, civil air lines carried out 175,737 flights, covered 12,822,751 miles, and carried 142,797 passengers, 1,770,738 lb. of freight, and 416,996 lb. of mail. There were 1,282,787 radiobroadcast listeners' licenses in force on Mar. 31, 1941. Shipping (1938-39): 3,814 ships aggregating 13,545,712 tons entered and cleared the ports.

Government. Executive power is vested in the King, who acts through a governor-general and a ministry responsible to the Federal Parliament. There is a Senate of 36 members (6 from each State), elected for 6 years and renewed by half every 3 years, and a House of Representatives of 74 members apportioned among the States on a population basis and elected for 3 years. Governor-General, Brig. Gen. Alexander Gore Arkwright, Baron Gowrie, who assumed office Jan. 22, 1936. Prime Minister at the beginning of 1941, Robert Gordon Menzies (United Australia party), who headed a coalition government representing the United Australia and United Country parties, formed Oct. 27, 1940. For changes in 1941, see below.

HISTORY

War Effort. Further Allied setbacks in the Balkans, Crete and Libya, German successes against Russia, and Japanese intervention on the side of the Axis spurred Australia to an intensified war effort during 1941. The 17,236 Australian troops sent with British contingents to Greece and Crete suffered 5,951 casualties (2,275 in Greece and 3,676 in Crete.) Total Australian casualties in Libya, Greece, Crete, Syria, and Palestine up to Nov. 14, 1941, were 12,950 (1,571 killed or died of wounds, 4,663 wounded, 3,663 missing, and 3,035 prisoners). Activities of German, and later Japanese, raiders in the South Pacific also brought the war close to Australia.

Army Mechanized. In January the War Cabinet decided to mechanize both the Australian Imperial Force and the Home Defense Force, at a cost of several million pounds. Immediately after the arrival of a large Australian contingent at Singapore

in February for the defense of British Malaya, the War Cabinet extended the compulsory militia training period from 70 to 90 days. Modifying the original Empire air scheme, the Government in mid-May authorized the organization of Australian airmen serving with the R.A.F. overseas into separate units with their own ground staffs. At the end of July, one-quarter of the entire Home Defense Force was called up for full-time duty until the end of the war.

As of August 10, 600,000 Australians were reported under arms or ready for immediate mobilization. The Australian Imperial Force for service overseas numbered 200,000. Another 228,000 were in the militia and Home Defense Force. There were an additional 61,000 men in the Royal Australian Air Force and 20,000 in the Royal Australian Navy. In August it was decided to organize a women's army for home defense to release more men for the overseas force and for work in munitions factories. Enrollment of 15,600 youths between 16 and 18 years of age in the Air Cadet Training Corps was begun soon afterward. The Air Minister announced August 18 that by the middle of 1942 23 Australian Air Force squadrons would be serving overseas. When Japan entered the war in December, the entire defense program was expanded. Immediate effects were the mobilization of the home defense forces and militia for the duration and the inclusion of fathers of up to four children in the draft.

Munitions Production. Meanwhile some 170,000 workers in munitions industries were pouring forth an increasing flow of war equipment and supplies for Empire and Allied forces in Malaya and the Middle East. A huge naval graving dock in Sydney, larger than that at Singapore, was rushed toward completion. The warplane industry, starting from scratch in 1940, had produced 1,000 planes by mid-September, 1941, and output for 1942 was expected to be doubled. Early in September the first Australian-built bombing plane—a Beaufort—was tested. The first locally-built light cruiser tanks for the armored division were delivered in September. Mass production of Bren machine guns began in January and of anti-tank guns in June. Anti-aircraft guns, rifles and small arms, ammunition, bombs, mines, and field guns were also in production before the end of 1941. Australian shipyards in July were at work on 50 naval vessels and 60 freighters.

Besides outfitting its own forces, Australia was called upon by the Empire Supply Council at Delhi, India, for 1,000,000 pairs of army boots and 60,000,000 pieces of textiles and clothing. Danger of a Japanese blockade led the Government in March to begin storing emergency stocks of essential supplies sufficient for three months, and to reduce still further the basic gasoline ration.

The cost of the defense program (see FINANCE) soared to £20,000,000 monthly by August, 1941, exceeding the monthly average on which the £225,000,000 domestic war budget for 1941-42 was based. War expenditure for 1941 was greater than that for the whole of World War I.

Economic Trends. As in many other raw-material exporting countries, the war stimulated the development of local manufacturing industries while curtailing the normal foreign markets for agricultural and pastoral products. Industrial unemployment in May, 1941, fell to 5.3 per cent, the lowest since the trade unions began keeping records in 1911. Despite the shortage of workers and rising living costs, the Commonwealth arbitration court on February 7 unanimously refused to increase the

basic wage rate established in 1937. On June 18 Prime Minister Menzies forbade further strikes and lockouts in defense industries, but the enabling legislation was shelved at the insistence of the Labor Opposition. The problem of obtaining increased manpower for war production was transferred to the Labor party when it gained control of the Government in October.

In the first quarter of the year, a drought reduced the wheat crop and necessitated distribution of £1,000,000 for the relief of wheat farmers. But surpluses of foodstuffs continued to accumulate, due to the lack of shipping. The Government continued to support prices of wheat, and in July undertook to buy the entire export surplus of quality meat. It urged the domestic consumption of more lamb, apples, pears, dairy products, etc., and with British financial aid undertook to acquire and store reserve food stocks. In the same month imports from non-sterling countries were reduced to 50 per cent of the pre-war level.

Political Events. The narrow margin by which the Government coalition retained control of both houses of Parliament in the election of Sept. 21, 1940 (see YEAR BOOK for 1940, p. 49 f.) led to its downfall in 1941. Labor gains in the 1940 general election were followed by victories in two States early in 1941. The Labor Government of William Forgan Smith was returned to office for a fourth consecutive term in Queensland on March 30. In New South Wales a reunited Labor party regained control of the State government from the United Australia-Country party coalition on May 11, after nine years in opposition. The new Labor Premier, William John McKell, excluded his extremist rival, ex-Premier J. T. Lang, from his government and pledged full support of the Commonwealth's war effort. The Laborites were not so successful in South Australia's election of March 30. Premier Thomas Playford's Liberal-Country party coalition was returned to office with increased strength. Tasmania's Labor Government, in office since 1934, was reelected for another five-year term on December 13.

The reverses suffered by Australian troops in Greece during April and May shook Prime Minister Menzies' Commonwealth Government. Its collapse was averted by a Government victory in the Boothby (South Australia) by-election of May 24. Menzies then renewed his offer to Labor of half the Cabinet posts if the party would join in a national government like that in London. The Labor leader, John Curtin, again rejected the offer, holding that it would stifle essential criticism.

With the approval of Parliament, the Prime Minister on June 26 increased his Cabinet from 12 to 19 members to speed the war effort. But there was criticism of his leadership within as well as without the ranks of the Government parties. This came to a head in August over his proposal to return to London to represent Australia in Imperial war councils. The Cabinet unanimously supported the proposal, but Labor and some Government supporters held that if Menzies went to London it should be as a member of the Cabinet and not as Prime Minister.

Menzies Resigns. This issue and the unstable position of the Government led to Prime Minister Menzies' resignation on August 28. He was succeeded by Arthur William Fadden, Commonwealth Treasurer and leader of the Country party, who had served as Acting Prime Minister during Menzies' absence in London early in the year. Fadden retained the same Cabinet, with Menzies serving as Minister of Defense Coordination. It was decided

to send Sir Earle Page, Minister of Commerce, to London as Australia's special representative.

The new Prime Minister's term was short, however. When Parliament convened to debate the budget for 1941-42, the Labor leader, Curtin, objected to provisions for compulsory loans, taxation on incomes as low as £150, and "illiberal" treatment of soldiers' dependents. In the vote on his motion of censure, two Independent members of the House of Representatives switched to the Opposition and the Fadden Government was defeated by three votes (October 3).

The Labor Cabinet. The Governor-General then called upon Curtin to form a new Government. Although dependent for a majority in the House upon the two Independent votes that had defeated Fadden, Curtin accepted. A party caucus elected the members of the Cabinet, announced October 6 as follows: Prime Minister and Defense Coordination, John Curtin; Deputy Prime Minister and Army, Francis Michael Forde, Treasurer, Joseph Benedict Chifley; Attorney General and External Affairs, Herbert Vere Evatt; Supply and Development, John Albert Beasley; Interior, Joseph S. Collings, Navy and Munitions, Norman J. O. Makin, Social Services and Health, Edward J. Holloway; Trade and Customs and Vice President of the Executive Council, Richard V. Keane; Air and Civil Aviation, Arthur S. Drakeford; Commerce, William J. Scully; Postmaster General and Information, William P. Ashley; Labor and National Service, Edward J. Ward; Repatriation and War Service Homes, Charles W. Frost; War Organization and Industrial Research, John J. Dedman; Home Security, Hubert P. Lazzarini; External Territories, James M. Fraser; Transport, George Lawson; Aircraft Production, Donald Cameron. Prime Minister Curtin and Ministers Forde, Chifley, Evatt, Beasley, Makin and Drakeford were named members of the War Cabinet.

The composition of the Cabinet gave all of the key positions to men of moderate views. Prime Minister Curtin announced that he would follow a cautious policy internally, speed up Australia's organization for war, and give full support and cooperation to the Empire war effort. He retained Sir Earle Page as special representative in London and all other diplomatic appointments of the previous governments. Labor's conservative policy was indicated by the expulsion of Representative Maurice M. Blackburn from the party for speaking at a pro-Communist gathering in August. On September 21, the federal executive of the Labor party voted to expel all members who joined or associated with Communist-front organizations.

On October 1 a joint meeting of the United Australia and Country parties elected Fadden as leader of the Opposition. The Curtin Government successfully floated a £100,000,000 war conversion loan in November. On November 28 it pegged house rents at the rates in effect Aug. 31, 1939.

Empire Relations. Australia's growing insecurity, its immense contribution to the Empire's war effort, and the defeats suffered by Australian troops in Greece and Crete due to lack of effective air and other support all contributed to the Commonwealth's demand for a larger voice in the direction of Empire war policies. The British Government welcomed Prime Minister Menzies on his visit to London and to the Middle East war fronts during the first months of the year. It approved the decision of the Australian Cabinet to send one of its members to London as its permanent spokesman in Empire war councils. To mollify Australia over the reverses in Greece and North Africa, the British on

April 23 named Lieut. Gen. Sir Thomas Blamey, Australian commander in the Middle East, as second in command to the British commander in chief in that region. The Australian War Council, meeting on June 13, received formal assurance from the British Government that Australian troops in the Middle East henceforth would receive the strongest possible air support.

The dispatch of large Australian forces to defend Singapore and British Malaya against a threatened Japanese attack increased Australian political interest in that area. In August the Minister of Interior and Information, H. S. Foll, visited Singapore with a party of Australian editors. He discussed the question of political representation at Singapore by an Australian High Commissioner and expansion of the activities there of the Australian Department of Information. On August 20 Prime Minister Menzies told Parliament that "Australia regards Singapore and Malaya as outposts of her defenses."

Joint Australian and New Zealand war plans and preparations were carried beyond the coordination of war production, arranged in 1940. Staff talks between Australian and New Zealand military and naval chiefs were held in Melbourne in March. In June the Commonwealth Government agreed to provide war supplies and materials to New Zealand on the same basis as to the Australian States.

War with Japan. There was steady deterioration of Australian relations with Japan, despite the arrival in Canberra on March 19 of the first Japanese Minister to Australia. Official spokesmen issued repeated warnings to Tokyo that Australia would resist Japanese expansion to the south. On February 25 Acting Prime Minister Fadden declared that "the further south certain people move, the further north Australia will move." To hamper Japanese activities in Australian waters, the government on February 20 declared the Melville and Buchanan islands off the northwest coast of Northern Territory as aboriginal reserves from which all outsiders were barred.

With the Japanese advance in French Indo-China, Australia on July 28 blocked all bank credits belonging to Japanese subjects and joined in the British-Dutch-United States economic blockade of Japan. Severance of trade relations was followed by the evacuation of virtually all the Japanese in Australia. In mid-October Australia saw new cause for alarm in the extension of a Japanese airline from Palau Island to Portuguese Timor, only 450 miles from Darwin.

Following the surprise Japanese attacks of December 7-8 on Anglo-American bases in the Pacific and Malaya, the Governor General of Australia on December 9 declared the Commonwealth at war with Japan as from 5 p.m. of December 8. On December 16 Parliament approved the Government's war declarations on Japan, Finland, Hungary, and Rumania. The Government immediately redoubled preparations to resist a large-scale attack upon Australia, as well as raids by carrier-based aircraft. Plans were made for immediate expansion of war-plane and other military production.

With the Allied reverses in Malaya, the Australian Government asked Britain to strengthen its Far Eastern air forces. It sought a full alliance with Russia and turned toward still closer relations with the United States in search of military assistance. At the same time the press and the Government demanded that the British Government place greater emphasis upon the protection of Singapore and that the war in the Pacific should not be viewed as a side issue to the war in Europe. These

views were forcibly impressed upon Prime Minister Churchill and President Roosevelt during their conferences in Washington late in December. It was announced on December 30 that Prime Minister Curtin had received concrete assurances of military support from Churchill. Meanwhile an assertion by Curtin that Australia sought an agreement making the United States the keystone of a Pacific defense program aroused protests from ex-Prime Minister W. M. Hughes and others, who accused Curtin of seeking to weaken Australia's ties with Britain. This he emphatically denied.

Relations with America. On October 20 Prime Minister Curtin announced the completion of negotiations for a united front in the Pacific by Britain, the United States, China, the Netherlands Indies, Australia, and New Zealand. As early as January 14, an official New Zealand source stated that Australia and New Zealand had an understanding with the United States covering future Japanese efforts to expand in the South Pacific. The negotiations with Washington for still closer cooperation were continued by the Australian Minister, by Prime Minister Menzies during his visit to the United States in May, and by Sir Earle Page, who stopped in Washington en route to London in October. An Australian economic mission was sent to Washington to discuss tariff and shipping problems, the disposal of Australian surpluses, and lend-lease aid. Ratifications of a treaty for the peaceful settlement of American-Australian disputes were exchanged August 13. United States flotillas on training cruises visited Sydney in March and Brisbane in August. Opening a direct radiotelegraphic communications system between Australia and the United States on December 25, President Roosevelt declared that he and Prime Minister Churchill considered Australia's safety "as a definite essential in every plan of defense and in every plan of offensive action against our common foes." A few days later it was indicated that American naval and air units would use Australia as an operational base.

Aid to Russia. The Australian Government on May 14 announced that it would appoint a Minister to China "as further recognition of the fact that Australia possesses vital interests in the Pacific." Prime Minister Menzies strongly endorsed the British Government's declaration of support for Russia against Germany (June 24) and the Cabinet approved in advance the Anglo-Russian alliance of mid-July. To facilitate Allied and American shipments of supplies to Russia, the Canberra authorities in October ordered the shipment of locomotives and freight cars from Australia's overburdened railway system for use on the Trans-Iranian Railway.

See **BRITISH MALAYA**, **GREAT BRITAIN**, and **JAPAN**, under **History**; **BIRTH CONTROL**; **CUSTOMS**, **BUREAU OF**; **LABOR CONDITIONS** under **Employment and Strikes**; **NAVAL PROGRESS**; **RAPID TRANSIT**; **SOCIALISM**; **WOOL**; **WORLD WAR**.

AUSTRALIAN ANTARCTIC TERRITORY, AUSTRALIAN CAPITAL TERRITORY. See **AUSTRALIA**.

AUSTRIA. A former independent state of central Europe, annexed by Germany on Mar. 13, 1938, and divided on Apr. 1, 1940, into seven administrative units of the German Reich. Area, 34,055 square miles; population at census of May 17, 1939, 6,972,269, divided into administrative districts (gaue) as follows: Vienna, 1,929,976; Lower Danube, 1,697,976; Upper Danube, 1,034,871; Styria, 1,116,407; Carinthia, 449,713; Salzburg,

257,226; Tirol and Vorarlberg, 486,400. Vienna, the former capital, had 1,918,462 inhabitants at the 1939 census; Graz, 210,175; Linz, 131,423.

Roman Catholics comprised 90.57 per cent of the population at the 1934 census; Protestants, 4.38 per cent; Jews, 2.83 per cent (191,481). The 1939 census showed 94,270 racial Jews. There were 4,721 public schools with 657,000 pupils in 1940. In 1936 the three Austrian universities (Vienna, Graz, and Innsbruck) had 14,027 students, and two technical high schools 2,514. Agriculture, manufacturing, mining, and lumbering are the main occupations (see *YEAR BOOK* for 1939, p. 57 for pre-annexation statistics). Formerly a favorite haunt of tourists, Austria has suffered since 1938 through the virtual exclusion of non-German tourists. In 1939 there were 3,685 miles of railway line and 42,120 miles of automobile roads.

Government. Upon the annexation of Austria, Chancellor Hitler appointed Josef Buerckel as Procurator for the Liquidation of Austria and Reich Commissar for the Reunion of Austria with Germany. Austria was subdivided into seven districts (Gaue), each under a National Socialist responsible to Herr Buerckel in Vienna, who in turn was directly responsible to Chancellor Hitler. Effective Apr. 1, 1940, this system was reorganized. The Nazi leader in each district was given the title Gauleiter (district leader) and Procurator, combining party and state functions, and became directly responsible to Hitler. Herr Buerckel's powers were restricted to those of Gauleiter and Procurator for Vienna. On Aug. 7, 1940, Buerckel was succeeded in Vienna by Baldur von Schirach, former head of the Hitler Youth.

History. Strict censorship veiled developments in Austria during 1941 from the outside world. Berlin confirmed mass deportations of Jews from Vienna to Poland in January. The Vatican on January 31 reported the expulsion of Benedictine monks from their monastery at Bregenz on the ground of hostility to the Nazi regime. Refugees from all Austrian classes reaching Istanbul in March reported widespread poverty and discontent in Austria, with no effective outlet for anti-Nazi sentiment. With Adolf Hitler as the chief speaker, indoor and outdoor demonstrations were held in Vienna on March 13 to celebrate the third anniversary of the German annexation. Hitler promised important social and economic gains after the victorious conclusion of the war. Dr. Kurt Schuschnigg, Chancellor of Austria who was deposed and imprisoned upon the German occupation in 1938, was being held in a special prison in Munich, Germany, according to a first cousin of the Chancellor who arrived in New York late in May. This contrasted with a Berlin report of March 14 that Schuschnigg was living unmolested in a Bavarian retreat. Archduke Robert of Habsburg, second son of Emperor Charles of Austria, declared in London on November 13 that all former political parties in Austria had "united to fight the German oppressor" and that sabotage in Austrian munitions factories was increasing.

Formation of a Free Austrian National Council with headquarters in Toronto and a representative in Washington was announced September 27. It was headed by Dr. Hans Rott, who claimed to be the oldest free member of Schuschnigg's Cabinet and therefore entitled to act as "Federal President" until the Council could "take over the rights and duties of the legal Austrian constitutional institutions." Early in April Count Ferdinand Czernin organized an anti-Nazi "Austrian Action" movement in the United States through which Austrians in the Western Hemisphere could combat German

Nazi fifth column activities and work for the liberation of Austria.

AUTOGIRO. See ENTOMOLOGY, ECONOMIC.

AUTOMOBILE RACING. With international speeding confined to tanks and jeeps, the main automobile racing affair of the year was once again the annual 500-mile race at Indianapolis on Memorial Day, when for the second time in history two drivers split the winning purse. This came about when Floyd Davis's car, in the ruck at the 200-mile mark, was taken over by relief driver Mauri Rose, who had been forced out of the grind miles back. Rose drove magnificently and wound up in front, and he and Davis had their names enscribed on the trophy, carved the winning money, and the glory. For a time the race seemed to be Wilbur Shaw's for the third time in succession and the fourth in five years, but the little man from Indianapolis whistled into the wall on the 151st lap and, unhurt, was thrown out of the race with his car a wreck. Rose took over Davis's engine 323 miles from home and finished in front of Rex Mays, with third money going to Ted Horn and fourth to Ralph Hepburn. Of the thirty-three starters, twelve finished the grind, the last until the war is over, according to official announcement late in December.

Rex Mays, the heavy-footed Californian, won the National championship on points, mainly because of the division of honors at Indianapolis, and his 825 points there. Ralph Hepburn finished in second slot for points, with Cliff Bergere and Floyd Davis following.

AUTOMOBILES. See MOTOR VEHICLES.

AUXILIARY FIREMEN. See FIRE PROTECTION.

AVIATION. See AERONAUTICS. For **AVIATION GASOLINE**, see PETROLEUM.

AZERBAIJAN SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

AZORES. A group of nine islands in the Atlantic Ocean about 800 miles west of Portugal, of which the islands are administratively a part, and some 2,100 miles from New York. Area, 922 square miles; population (1930 census), 253,935. The largest island, São Miguel, measuring 41 miles long and 9 miles wide, contains more than one-half of the population. Capital and chief seaport, Ponta Delgada (pop. 18,022) on São Miguel. The other islands are Corvo, Fayal, Flores, Graciosa, Pico, Santa Maria, São Jorge, and Terceiro (second largest). Angra (pop. 10,642) on Terceiro and Horta (pop. 7,643) on Fayal are the other leading cities. Horta is a seaplane base on Pan American Airways' transatlantic route from New York to Lisbon, and is one of the world's principal cable stations. Agriculture, dairying, and needlework are the chief occupations. The principal crops are corn, hothouse pineapples, sugar beets, wheat, tobacco, and fruits. Imports come mainly from Portugal. In normal times, pineapples are exported to northern Europe and embroidery to the United States.

History. The strategic importance of the Azores in the expanding Allied-Axis struggle for control of the Atlantic was emphasized in 1941. President Roosevelt on May 27 stated that German control of the islands would threaten the security of the Western Hemisphere. The Portuguese Government sent successive contingents of troops to reinforce the islands' garrison. Early in August President

Carmona made an official visit. See PORTUGAL under *History*.

BACTERIOPHAGE. See BIOLOGICAL CHEMISTRY.

BADEN. See GERMANY under *Area and Population*.

BADMINTON. David Freeman of Pasadena, Calif., remained the nation's No. 1 badminton player in 1941, for the third successive year. He won the men's national singles, and shared in the doubles championship. Thelma Kingsbury of Oakland, Calif., three times holder of the English championship, took over the women's singles title, defeating last year's titleholder, Evelyn Boldrick, in the final.

Eastern singles champions were Carl W. Love-day of the Montclair A.C. in the men's and, retaining her title, Mary Hagen in the women's. Spencer Davis of Princeton University captured the Eastern intercollegiate title.

BAHAMAS. A British West Indian crown colony consisting of 20 inhabited and several uninhabited islands and rocks. Land area, 4,404 square miles; population (1939 estimate), 68,903. Chief islands: Abaco, Acklins, Andros, Bimini, Cat Island, Crooked Island, Eleuthera, Exuma, Grand Bahama, Inagua, Long Island, Mayaguana, New Providence, Rum Cay, and San Salvador (or Watlings). Capital, Nassau (on New Providence). Education (1939): primary and secondary schools had 16,502 students enrolled.

Production and Trade. Sponge, shell (tortoise and conch), cascarilla bark, pine timber, salt, tomatoes, sisal, and crawfish are the chief products. The tourist trade is important. Trade (1940): £1,284,417 for imports (£1,094,170 in 1939) and £229,140 for exports and reexports (£180,281 in 1939). Sponge exports declined to £13,986 in 1940 from £69,813 in 1939. Shipping (1939): 1,438 vessels aggregating 2,354,424 tons entered the ports.

Government. Finance (1940 estimates): £404,192 for revenue and £441,557 for expenditure. Public debt, Dec. 31, 1939, £195,923. Executive power rests with a governor, assisted by an executive council. The legislature consists of a legislative council (9 nominated members) and a house of assembly (29 elected members). Governor and Commander-in-Chief, Duke of Windsor (assumed office, Aug. 17, 1940).

History. Abraham Bay and an adjacent part of Mayaguana Island, leased to the United States for a seaplane base in 1940 (see YEAR BOOK for 1940, p. 57), was found to be unsuitable after further survey. The U.S. government then selected a new site near Georgetown on Exuma Island. A bill authorizing establishment of a U.S. naval-air base there was passed by the house of assembly at Nassau, Sept. 23, 1941. In the autumn of 1941 the government banned sponge fishing within the colony's territorial waters until the end of 1943.

BAHREIN ISLANDS. See under ARABIA.

BAKER ISLAND. An island in the mid-Pacific (0° 13' N. and 176° 31' W.), owned by the United States. It lies athwart the main steamship lanes and Pan American Airways' route from Honolulu to New Zealand and Australia. The island was unoccupied for a number of years until 1936 when the U.S. Department of the Interior established an aerological station (see YEAR BOOK for 1936, p. 79).

BALEARIC ISLANDS. See SPAIN under *Area and Population*.

BALI. See NETHERLANDS INDIES under *Area and Population*.

BALKAN ENTENTE. A bloc of Balkan states—Greece, Rumania, Turkey, and Yugoslavia—which by the treaty of Feb. 9, 1934, mutually guaranteed their frontiers against aggression by any other Balkan country. The alliance was nullified by the establishment of German control over Rumania, Yugoslavia, and Greece in 1940-41. For the history of the Balkan Entente, see YEAR BOOKS for 1934 to 1940 inclusive, under that title.

BALKAN STATES. The countries of the peninsula south of the Danube, and bounded by the Adriatic, Aegean, and Black Seas. See ALBANIA, BULGARIA, GREECE, RUMANIA, TURKEY, YUGOSLAVIA.

BANGKA. See NETHERLANDS INDIES under *Area and Population*.

BANG'S DISEASE. See VETERINARY MEDICINE.

BANK ROBBERIES. See FEDERAL BUREAU OF INVESTIGATION.

BANKRUPTCY AND RECEIVERSHIP. See BUSINESS REVIEW; RAILWAYS.

BANKS AND BANKING. The deposits of banks in the United States rose to new high record levels during 1941 as a result of large-scale purchases of new Government obligations and a considerable increase in commercial and industrial loans. As Government expenditures rose by leaps and bounds because of the ever-expanding national defense program and lease-lend requirements, the Treasury found it necessary to obtain an increasing proportion of these funds through the sale of new obligations. Because of limited purchases of these securities by ultimate investors, the banks were called upon to absorb a large percentage of the increase in the national debt. During the first half of the year, purchases occurred chiefly in New York City, but in the latter months, as the excess reserves of big city banks dwindled, most of the purchases occurred outside of the New York City banks. See also PUBLIC FINANCE.

Banking developments during 1941 differed from those of the preceding years because of the virtual cessation of the inflow of gold. The war in Europe checked gold shipments to the United States, so that shipments for the year aggregated only \$929,574,000 as compared with \$4,744,472,000 during 1940. As British gold reserves were rapidly exhausted, gold receipts here consisted chiefly of new Canadian production and modest receipts from Latin America.

Commercial banks favored intermediate and shorter-term issues in their purchases of Government securities, hesitating to incur the risk of a later rise in interest rates and consequent decline in long-term bond prices. The following table shows the distribution of maturities of Treasury securities held by 5,799 commercial banks which accounted for the bulk of commercial bank investments in Government bonds:

PUBLIC MARKETABLE TREASURY SECURITIES
HELD BY COMMERCIAL BANKS

	<i>Due or Callable</i>	<i>Amount Held</i>
Within 1 year	.. .	\$ 3,127,000,000
1 to 5 years	.. .	8,284,000,000
5 to 10 years	.. .	4,476,000,000
10 to 15 years	.. .	2,810,000,000
15 to 20 years	.. .	565,000,000
Over 20 years	.. .	478,000,000
F H A debentures	.. .	5,000,000
Total	.. .	\$19,744,000,000

The rise in bank loans was pronounced. Between June 29, 1940, and Sept. 24, 1941, total loans of all commercial banks in the United States increased

from \$17,400,000,000 to \$21,300,000,000, the sharpest increase in bank loans reported since the twenties. The rise reflected chiefly two separate influences. First, numerous industries receiving armament orders or sub-contracts borrowed money in order to finance large-scale operations. Secondly, a number of consumer goods industries incurred bank loans to finance a larger volume of sales and increased inventories reflecting the rush to buy before priority and other restrictions affected them. Heavy retail sales of automobiles financed by banks contributed to the rise in the loan total. Needless to say, with the outbreak of war, loans to consumer goods industries and to consumers were certain to decline, but a larger volume of defense lines loomed.

The principal assets and liabilities of insured commercial banks on June 30, 1941, and comparable earlier dates, were as follows:

PRINCIPAL ASSETS AND LIABILITIES OF INSURED COMMERCIAL BANKS
[In thousands of dollars]

	June 29, 1940	Dec 31, 1940	June 30, 1941
Reserve with Federal Reserve Banks	13,750,656	13,991,733	12,958,527
Other balances with banks	7,556,291	8,216,151	8,308,583
U.S. Govt. obligations, direct & fully guaranteed	15,900,885	17,063,870	19,370,714
Other securities	6,920,404	7,099,402	6,907,899
Loans, discounts, and overdrafts (incl redisc. accounts)	17,014,372	18,397,472	19,913,169
Demand deposits (of individuals, partnerships, and corporations)	28,899,054	32,400,488	34,330,943
Time deposits (of individuals, partnerships, and corporations)	14,779,568	15,002,076	15,207,488
Total deposits	58,425,391	63,469,170	65,616,648
Total liabilities and capital account	65,589,180	70,719,525	72,984,112

The changes in loans, investments, and deposits of reporting member banks of the Federal Reserve System, month by month during 1941, are shown in the following table:

LOANS, INVESTMENTS, AND DEPOSITS OF REPORTING MEMBER BANKS IN 101 LEADING CITIES
[Monthly data are averages of weekly figures. In millions of dollars]

Month	Commercial, industrial, and agricultural loans	Loans to brokers and dealers in securities	Other loans for purchase or carrying of securities	All other loans	U.S. Government obligations		Other securities	Demand deposits adjusted
					Direct	Guaranteed		
January	5,051	471	460	3,313	9,941	2,748	3,677	22,757
February	5,186	440	458	3,324	10,379	2,759	3,770	23,092
March	5,374	503	455	3,366	10,538	2,761	3,796	23,324
April	5,506	482	450	3,411	10,733	2,895	3,793	23,515
May	5,621	479	446	3,483	10,752	3,072	3,711	24,010
June	5,772	483	447	3,550	11,219	3,034	3,652	23,969
July	5,975	496	445	3,585	11,274	3,216	3,589	24,211
August	6,149	453	438	3,621	11,266	3,312	3,703	24,343
September	6,321	536	437	3,643	11,148	3,319	3,767	24,404
October	6,525	521	432	3,674	11,127	3,330	3,759	24,391
November	6,610	542	431	3,694	11,742	2,925	3,677	24,168
December 31	6,728	537	422	3,683	12,085	2,964	3,666	23,650

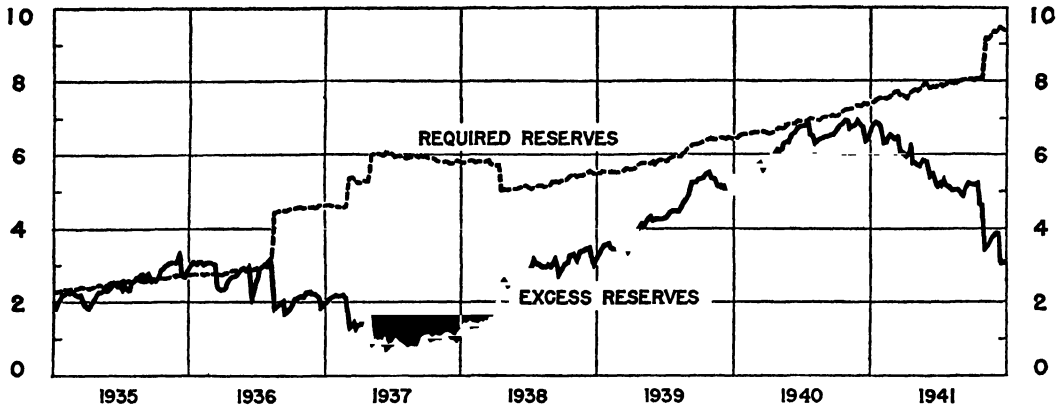
Credit Control Policy. Excess reserves of member banks of the Federal Reserve System dropped from more than \$6,800,000,000 in January to \$3,085,000,000 at the end of the year. Several factors combined to reduce surplus reserves to the lowest level reached since late in 1938. These included the expansion of required reserves due to the sharp rise in deposits, the rapid increase of currency in circulation, and the action of the Board of Governors of the Federal Reserve System in raising to the maximum levels allowed by law the legal reserve requirements of member banks, effective November 1. (See the diagram on page 54.)

The rise in bank deposits, the first factor raising legal reserve requirements, resulted from the heavy purchases of Government bonds by the banks and the increase in bank loans, already mentioned above. The rise of money in circulation reflected greatly increased employment, higher wages, hoarding by aliens fearful of registration requirements, and some domestic hoarding typical of all war periods. Federal Reserve notes in circulation at the end of the year aggregated \$8,192,000,000, which compared with \$5,930,000,000 a year before. The increase in legal reserve requirements was ordered by the Board of Governors after overcoming resistance from the Treasury, which saw no need for the action and feared it might interfere with the market for new issues of Government securities sold to finance the deficit. Soon after the higher reserve requirements went into effect, however, it became apparent that the action was very untimely. With the outbreak of the war, the Federal Reserve banks bought \$60,000,000 of Government bonds to steady the market, and halted further purchases only when it became clear that no panic liquidation would follow and Treasury obligations rallied from initial declines of 1 to 2 points. These purchases of Government bonds by the Reserve banks offset the November 1 rise in reserve requirements, neutralizing such action in part.

Since it was certain that the banks would be required to purchase billions of dollars of new Government securities annually during the period of the war, credit policies to further this end had to be formulated. The major features of a wartime credit policy were generally recognized as being: (1) Provision of a plentiful supply of excess reserves to the banks, through reduction in legal reserve requirements or open market purchases of Government bonds by the Federal Reserve banks if required, to assure a ready market for new issues of Treasury securities not taken by ultimate investors. (2) Offerings to the banks of relatively low rate obligations of short or intermediate term, to avoid adding greatly to holdings of long term securities involving a greater risk of price depreciation. (3) The taking of all measures necessary to keep the Government bond market on an even

keel, through open market purchases and otherwise, in order to facilitate Treasury financing.

Short-term interest rates firmed sharply late in the year as excess reserves declined. The Federal Reserve authorities favored this rise in Treasury bill and related short-term rates in the money market, on the ground that this would encourage the banks to build up holdings of such assets which they could dispose of whenever necessary in order to strengthen their reserve position. Such a cushion of short-term assets, it was felt, would make less likely sales of long-term Government bonds by the banks, if they wish to add to their cash position.



Federal Reserve Bulletin

EXCESS RESERVES OF FEDERAL RESERVE BANKS

Fluctuations in member bank excess reserves during 1941 were as follows:

EXCESS RESERVES OF MEMBER BANKS
[Million dollars]

January 31	....	6,832	July 31	...	5,193
February 29	..	6,422	August 31	.....	5,017
March 30	...	6,304	September 30	....	5,116
April 30	.....	5,883	October 31	.....	5,001
May 31	.....	5,831	November 30	...	3,611
June 29	..	5,351	December 31	...	3,085

Changes in open-market interest rates, which closely reflected the decline in excess reserves shown above, were as follows during the year:

	Prime commercial paper, 4 to 6 months	Prime bankers' acceptances 90 days	Stock exchange call loan renewals	U.S. treasury 5-month bills
1941—Jan. ....	.56	.44	1.00	
Feb. ....	.56	.44	1.00	.034
Mar. ....	.56	.44	1.00	.089
April ....	.56	.44	1.00	.092
May ..	.56	.44	1.00	.082
June ..	.56	.44	1.00	.089
July .....	.50	.44	1.00	.097
Aug. ....	.50	.44	1.00	.108
Sept. ....	.50	.44	1.00	.055
Oct. ....	.50	.44	1.00	.049
Nov. ..	.50	.44	1.00	.242
Dec. ..	.56	.44	1.00	.298

Federal Reserve Banks. The chief change in the condition statements of the Federal Reserve banks for the year was the rise in the volume of currency in circulation. Government security holdings showed a change only in the final weeks of the year, when bonds were bought following the outbreak of war, but there was a shift from short-term to long-term holdings based on the thesis that the chief objective of credit control under prevailing conditions must be the stabilization of prices of long-term Treasury obligations, and hence that more of these securities should be held.

PRINCIPAL ASSETS AND LIABILITIES OF ALL FEDERAL RESERVE BANKS

[In millions of dollars]

1941 End of Month	Gold certificates on hand and due from U S Treasury	Bills dis- counted	Government bonds	Government notes	Federal reserve notes	Member bank deposits	U S Treasury deposits
January	19,905	2	1,280	900	5,884	13,930	688
February	20,020	3	1,280	900	6,022	14,203	343
March	20,102	3	1,359	820	6,143	13,371	1,180
April	20,193	2	1,359	820	6,282	13,524	865
May	20,317	4	1,359	820	6,503	13,724	443
June	20,313	2	1,359	820	6,724	13,051	980
July	20,303	5	1,359	820	6,857	13,155	877
August	20,299	11	1,359	820	7,080	12,794	906
September	20,446	11	1,359	820	7,234	13,227	423
October	20,557	6	1,402	777	7,432	12,580	987
November	20,553	6	1,402	777	7,669	13,140	429
December 31	20,490	3	1,462	777	8,192	12,450	867

Changes in assets of the twelve Federal Reserve banks in 1941 appear in table at foot of page.

Gold Movements. Gold played a smaller role in domestic and international finance than at any time for a century or more. No country based its internal credit policies upon the inflow or outflow of yellow metal. Even in the United States, where credit conditions had been influenced during recent years by heavy gold imports which expanded excess reserves, other factors were far more important during 1941 in changing the total of reserve balances. In international finance, the enactment of the lease-lend law by the U.S. Congress in March made American supplies and war materials available to nations resisting aggression without cash payment. Thus, gold played only to a limited extent its major role in international finance of recent years—to provide dollars to pay for a surplus of purchases from the United States. Gold imports into the United States in November, 1941, the last month for which reports were published before the war ended the issuance of such statistics, were \$50,374,000 (\$330,107,000 in November, 1940). Total imports for the first eleven months of 1941 were \$929,574,000.

World Banking and Monetary Developments. The war gave rise to inflationary banking developments in most countries of the world. In the belligerent nations, heavy Government deficits compelled governments to borrow from the banks, while intensive economic activity and rising commodity prices expanded currency circulation. In the occupied countries of Europe, the huge costs of the armies of occupation were covered in large part by the issuance of new notes by the central banks, producing a currency inflation of the old fashioned type that made control over prices more and more difficult, despite drastic direct controls and rationing. France, paying an occupation bill of 400,000,000

francs daily, suffered a particularly severe currency inflation.

The volume of currency outstanding in a number of countries, at the latest date reported, with comparisons, was as follows:

CENTRAL BANK NOTE CIRCULATION

Country	Date	Note Circulation	Outstanding at end of 1940
Great Britain	Dec. 31, '41	£751,700,000	£616,900,000
France	Aug. 28, '41	244,099,000,000 francs	218,383,000,000 francs
Germany	Nov. 22, '41	16,645,000,000 reichsmarks	15,419,000,000 reichsmarks
Argentina	Nov. '41	1,281,000,000 pesos	1,224,000,000 pesos
Colombia	Nov. '41	68,009,000 pesos	62,327,000 pesos
Chile	Oct. '41	1,242,000,000 pesos	1,149,000,000 pesos
Australia	Oct. '41	£73,614,000	£68,119,000
Canada	Dec. '41	\$496,956,000	\$359,949,000

While Great Britain and other nations fighting Germany received aid under the lease-lend law, payments due on commitments incurred before this law was enacted in March, 1941, and remittances to South American and other neutral countries reduced their gold and foreign exchange resources

expected to enter Latin America, it was apparent, chiefly through governmental, rather than through private, channels.

Foreign Exchange. Abnormal world financial conditions produced a further drying up of foreign

exchange trading. Except for several Latin American countries, exchanges were under full official control, and dealings here were further hampered by the existence of foreign funds control. Changes reported in the major foreign exchange rates during 1941 were as follows:

FOREIGN EXCHANGE RATES, 1941

[Average of noon buying rates for cable transfers in New York. In cents per unit of foreign currency]

Month	United Kingdom (free pound)	Italy (lira)	Germany (reichsmark)	Sweden (krona)	Spain (peseta)	Switzerland (franc)	Australia (pound free)	Canada (dollar free)
January . . .	403 42	5 0432	39 979	23 826	9 130	23 220	321 50	84 801
February . .	402 97	5 0422	39 969	23 829	9 130	23 217	321 11	83 687
March	403 19	5 0452	39 960	23 824	9 130	23 210	321 30	84,981
April	402 48	5 0475	39 962	23 825	9 130	23 201	320 70	87 651
May	403 10	5 0805	39 968	23 839	9 130	23 203	321 19	87 421
June	403 16	5 2621	39,970	23,836	9.130	23 206	321 25	88 183
July	403 23	..	..	..	..	..	321 31	88 271
August . . .	403 18	..	..	..	..	..	321 28	88 961
September .	403 27	..	..	..	..	..	321 33	89 134
October . . .	403 29	..	..	..	..	..	321 37	88 781
November . .	403 42	..	..	..	..	..	321 43	88 604
December . .	403 50	..	..	..	..	..	321.60	87 395

Month	British India (rupee)	Hong Kong (dollar)	China (yuan)	Japan (yen)	Argentina (peso, export)	Brazil (milreis free)	Chile (peso, export)	Mexico (peso)
January . . .	30 148	23 648	5 391	23 439	..	5 0560	4.0000	20 504
February . .	30 140	24 142	5 424	23 439	..	5 0604	4.0000	20 524
March	30 139	24 421	5 358	23 439	23 704	5 0599	4.0000	20 529
April	30 129	24 393	5,190	23 439	23 704	5 0600	4 0000	20 538
May	30 129	24 285	5 255	23 439	23 704	5 0600	4 0000	20 537
June	30 129	24 372	5 336	23 439	23,704	5 0598	..	20 533
July	30 128	24 524	5 243	23 439	23 704	5 0616	..	20 542
August . . .	30 130	25 110	..	..	23 704	5 0646	..	20 538
September .	30 137	25 099	..	..	23 704	5 0616	..	20 542
October . . .	30 151	25 088	..	..	23,704	5 0803	..	20,567
November . .	30 151	25 088	..	..	23 704	5,0896	..	20 544
December . .	..	..	..	..	23,704	5.1331	..	20,560

further. The Reconstruction Finance Corporation (q.v.) undertook in July, 1941, to advance \$425,000,000 to the British Government as needed on American securities owned by that Government having a market value of \$205,000,000 at the time, and on direct investments in this country with an estimated value of \$495,000,000. It was made clear that this loan did not preclude sales of British holdings from time to time as occasion warranted, however. The largest sale of British holdings in the United States occurred in March, when about 90 per cent of the stock of the American Viscose Company was distributed publicly at a price to net the British Treasury more than \$36,000,000.

Latin American countries were benefited financially by increased exports to the United States and by the higher prices received for these exports. In addition, financial aid was provided Mexico and several other nations through currency stabilization credits, highway loans, etc. The State Department adopted a more passive policy with regard to the protection of private American investments in Latin America, as shown by its agreement with Mexico for the appointment of appraisers to value the property of American oil companies expropriated in that country. Previously, the State Department had been insisting upon "prompt and adequate" compensation for these properties, originally seized by Mexico in March, 1938. American capital was

See EXPORT-IMPORT BANK; FINANCIAL REVIEW; PUBLIC FINANCE.

JULES I. BOGEN.

BAPTISTS. A religious group, probably evolved from the Anabaptist movement of the 16th century, which adopted the principle that immersion is essential to valid baptism. The first Baptist churches were established in Amsterdam in 1608, in London in 1611, and in America, probably at Providence, R.I., in 1639. There are 21 denominations in the United States which use the name *Baptist*, the largest of which are treated below.

Northern Baptist Convention. This body of the Baptist denomination, according to the *Year Book* of the Northern Baptist Convention, was composed in 1941 of 36 conventions in 33 States, the District of Columbia, and Puerto Rico. The thirty-fourth annual meeting of the Northern Baptist Convention was held in Wichita, Kan., May 20-25, 1941. Its general theme was "The Sufficient Christ for a Suffering World." The officers elected for 1941-42 were: President, the Rev. William A. Elliott, D.D., Ottawa, Kans.; First Vice-President, Gov. H. E. Stassen, St. Paul, Minn.; Second Vice-President, Mrs. Frank C. Wigginton, Carnegie, Pa.; Corresponding Secretary, the Rev. Joseph C. Hagen, D.D., Summit, N.J.; Recording Secretary, the Rev. Clarence M. Gallup, D.D., New York, N.Y.; and

Treasurer, Harold J. Manson, Brooklyn, N.Y. The leading denominational papers were: *Baptist Observer* (Indianapolis); *Baptist Record* (Pella, Ia.); *Missions* (New York); *Watchman-Examiner* (New York); and *U.S. Baptist* (Washington, D.C.).

The foreign mission field of the Northern Baptist Convention included Assam, Burma, South India, Bengal-Orissa, South China, East China, West China, Japan, Belgian Congo, and the Philippine Islands. The work of the Convention covers domestic, city, and foreign missions; higher education, social service, Sunday schools, and pensions for clergy.

The total membership of the Northern Baptist Convention for 1940-41 was 1,561,289, distributed among 7,503 churches, mostly above the Mason and Dixon Line. The total amount of funds received and expended by the churches and their agencies, as of Apr. 30, 1941, was \$15,513,609 for church operating expenses and \$3,422,227 for missions, education, and philanthropy.

Headquarters of the General Council, the executive body to which is entrusted the work of the Convention between annual meetings, are at 152 Madison Avenue, New York, N.Y. The next annual meeting of the Convention will be held in Cleveland, Ohio, May 26-31, 1942.

Southern Baptist Convention. This body of the Baptist denomination was formed in 1845, when Southern Baptists withdrew from the national organization on account of the slavery issue and also for the better administration of the work of the Convention. Since that time it has functioned, not as a new denomination, but as a separate organization for the purpose of directing missionary, educational, and general denominational work in the white Baptist churches of the Southern and Southwestern States. According to the official *Handbook* for 1941 the Southern Baptist Convention comprised 18 State conventions.

The annual session of the Southern Baptist Convention was held in Birmingham, Ala., May 14-18, 1941. The various boards and agencies of the Convention showed decided gains in receipts for the year. The director of the Work of Promotion in the Executive Committee, Dr. J. E. Dillard, led an "Every Member Canvass" during the week of November 23 to December 6, 1941, with the objective of securing weekly subscriptions totaling \$45,000,000.

The officers elected for 1941, 1942 were: The Rev. W. W. Hamilton, D.D., LL.D., of New Orleans, La., President; Rev. Edward Davis Solomon, D.D., of Florida and Rev. Charles Alfred Jones of South Carolina, Vice-Presidents; the Rev. Hight C. Moore, D.D., Litt.D., of Nashville, Tenn., and Mr. J. Henry Burnett of Macon, Ga., Recording Secretaries; and the Rev. Austin Crouch, D.D., of Nashville, Tenn., Executive Secretary, and the Rev. J. E. Dillard, D.D., of Nashville, Tenn., Secretary of Promotion. Headquarters are at 161 Eighth Avenue, North, Nashville, Tenn.

The statistics for 1941 were as follows:

Churches (congregations)	25,259
Ordained ministers	23,040
Church members	5,104,327
Sunday Schools	24,222
Enrolled in Sunday Schools	3,590,374
Enrolled in Baptist Training Unions	919,689
Enrolled in Missionary Unions	758,151
Value of church property	\$221,974,479
Gifts to local work of churches	\$33,571,412
Gifts to missions & benevolences	\$6,787,626
Total contributions	\$40,359,038
Schools and colleges fostered	65
Students enrolled—regular session	26,684
School property	\$46,279,717
Endowment funds	\$29,630,845
Property of 18 Children's Homes	\$6,808,361
Property of 20 hospitals	\$14,279,730

National Baptist Convention of America. With 32 States out of the 48 in the United States represented, the National Baptist Convention of America held its Sixty-First Annual Session with the Baptist churches of Shreveport, La., Sept. 10-14, 1941. The Theme of the Convention was "The Christians' Defense In A Changing World." Meeting jointly with the parent body was the Women's Auxiliary and the Laymen's League.

Emphasis was once more put upon Christian education as conducted in denominational schools under the auspices of the various State conventions who are a part of the National Baptist Convention of America. The four schools supported by the Convention are Lynchburg Theological Seminary and College at Lynchburg, Va.; Guadalupe College at Seguin, Tex.; Georgia Baptist College at Macon, Ga.; and the Florida Normal and Industrial College at St. Augustine, Fla. These schools were given increased financial support. Funds were raised for the membership of this Convention in the Baptist World's Alliance. The Convention also authorized a contribution of its quota of membership in the Committee on Army and Navy Chaplains, headquartered in the Woodward Building in Washington, D.C. The Evangelical Board and the Statistician of the National Baptist Convention of America, in their reports, showed an increase in membership of more than 56,000, which, according to the Statistician, brings the numerical strength to past the 2,007,000 mark. A committee of five was named to submit plans for the erecting of the buildings on the 160 acres of land donated to the Convention in Dexter, N.M., to be used as an orphanage, for a home for aged ministers, and a home for widows. Resolutions were adopted calling upon industry and the Federal Government to discontinue discrimination against the Negro in all lines of work and endeavor and urged that the Negro be given consideration and an opportunity in the various branches of Army, Navy, and in the Air Corps.

The Convention voted to accept the invitation of Boston, Mass., and adjourned to meet in that city Sept. 9-13, 1942. Rev. G. L. Prince, D.D., was elected President. Rev. C. P. Madison, D.D., Secretary, and Rev. A. A. Lucas, Treasurer. Denominational headquarters are at 523 Second Avenue, North, Nashville, Tennessee.

BARBADOS. An insular colony of the British West Indies. Area, 166 square miles; population (Jan. 1, 1940), 195,548. Vital statistics (1939): 5,497 births and 3,381 deaths. Education (1939): 138 schools of all kinds and 23,063 pupils (average attendance).

Production and Trade. Chief products—sugar (97,315 tons in 1940), cotton, rum, and molasses. The British government agreed to purchase all exportable sugar during 1940. Four rum distilleries and 108 sugar works were in operation on the island. Natural gas deposits have been found. The fishing industry employs about 300 boats and 1,600 people during the flying-fish season. Trade (1939): £2,445,753 for imports and £2,028,991 for exports (sugar £1,278,295, molasses £575,358). Shipping (1939): 2,871,577 tons entered and cleared the port of Bridgetown. Air services are operated by Royal Dutch Air Lines (Barbados-Trinidad-Curaçao) and British West Indies Airways (Barbados-Tobago-Trinidad). Roads (1940): 538 miles.

Government. Finance: (1940-41 estimates)—revenue £573,597, expenditure £653,967; (1939-40 actual)—revenue £611,831, expenditure £627,773. Public debt (Mar. 31, 1940), £449,170. The executive branch of the government is headed by a governor, aided by an executive council of 9 mem-

members. There is a house of assembly of 24 members elected every 2 years by the people. Governor and Commander-in-Chief, Sir Henry Grattan Bushe (appointed July 1, 1941; assumed office Oct. 23, 1941).

BARBUDA. See LEEWARD ISLANDS.

BARLEY. The barley crop of the United States in 1941 was estimated by the U.S. Department of Agriculture at 358,709,000 bu., nearly 16 per cent more than the 310,108,000 bu. grown in 1940 and about 59 per cent above the 1930-39 average and was harvested from 14,049,000 acres versus 13,496,000 acres in 1940. Increased acreages and better than average yields resulted in large production, which surpassed the previous record of 320,351,000 bu. in 1928. In 1941, the acre yield averaged 25.5 bu. and in 1940, 23 bu. The 1941 production of leading barley States was for Nebraska 48,832,000 bu., Minnesota 44,604,000 bu., North Dakota 43,675,000, South Dakota 38,610,000, Kansas 26,120,000, and California 25,529,000 bu. The seasonal average price per bu. (preliminary) received by farmers was 49.4¢ and the estimated value of production was \$177,070,000 in 1941 compared to 39.7¢ and \$122,974,000 in 1940. See *Crop Production Table* under AGRICULTURE.

BASEBALL. Brooklyn was baseball in 1941. Never in the history of the pastime had a team taken such a strangle-hold on the national fancy as the Brooklyn Dodgers, managed by loud Leo Durocher, with louder Larry McPhail as president, and sparked by such players as Whitlow Wyatt, Joe Medwick, Dolph Camilli, Peeewe Reese, Dixie Walker, Pete Reiser, Freddy Fitzsimmons, Hugh Casey, and Kirby Higbe. The nation watched with apathy as the New York Yankees, dethroned in 1940, romped home to the pennant early in September, but watched enthralled as the Dodgers tangled with the St. Louis Cardinals right down to the closing days of the race. The Yankees trampled on the Dodgers in the World Series, winning four games to one, but the fact that Brooklyn had won a pennant after twenty-one years of futility was the event of the year and the excellence of the Yankees was lost on the people.

Brooklyn started as co-favorite with the Cincinnati Reds, winners in 1939 and 1940, and world's champions in 1940, with St. Louis third choice. But the champions never hit the ball and Paul Derringer and Bucky Walters, their ace pitchers, had a dull year. Brooklyn's veterans, added to during mid-season by Billy Herman, great second baseman from Chicago, were always in the fight, and so were the youthful Cardinals. Brooklyn's experience finally won out, but had nothing left when it faced the Yankees in the World Series.

The Dodgers were tired and the Yankees had rested on their laurels for almost a month, and the Yanks won the first game, lost the second, won the third, and the fourth on a remarkable play, and then the fifth. The fourth game is historic, because the Yankees went into the ninth inning at Ebbets Field trailing 2 to 4, and won out 6 to 4, when Mickey Owen, Dodger catcher, dropped a third strike, which would have meant the third out, and let Tommy Henrich reach first base. Then Di Maggio and Keller and Dickey and the other Yankees pounded Hugh Casey and won the game, as the reason of Dodger rooters tottered. Owen was made the "goat" of the series, for if he had caught the ball the game would have been over and the Dodgers would have been even with the Yankees, two games each.

The Yankees, who bowed to the Detroit Tigers in 1940, started the campaign slowly and it wasn't until mid-June that they started to move. At that time they were seven games back of the highly favored Cleveland Indians, who were under the management of Roger Peckinpaugh and led by Bobby Feller, the world's best pitcher. Then Joe Di Maggio started to hit and he hit safely in fifty-six straight games, far exceeding the modern record of forty-one, set by George Sisler in 1922, and the ancient record of forty-four made by legendary Willie Keeler in 1897. While Di Maggio hit safely game after game, he received even more notice than the Dodgers, and when he was ultimately stifled in a night game in Cleveland, the Yankees were far in front and were never headed, as the entire squad took the hunt from the great center fielder.

Because of this remarkable successive hitting streak and his magnificent fielding through the season, Di Maggio was voted the most valuable player in the American League at the end of the campaign, although there were many votes for Ted Williams of the Boston Red Sox, who hit an incredible .406 for the 1941 season. This was the first time since Bill Terry batted .401 in 1930 that a major leaguer has bettered .400, and the first time in the American League since 1923 when Harry Heilmann of Detroit batted .403. Camilli won the most valuable award in the National League for his fine fielding at first base for the Dodgers and his timely hitting in the clutches Wyatt and Higbe, only twenty-game winners in the league, were close up in the balloting. Pete Reiser, rookie center fielder, won the National League batting crown with .343.

Bobby Feller, who was called to service in the Navy late in the year, won twenty-five games for the disappointing Indians, and Thornton Lee, of the Chicago White Sox, equalled the twenty-two victories chalked up by Wyatt and Higbe for the Dodgers. There were two important managerial changes after the World Series, when Bill Terry of the New York Giants was sent to a front office job and Mel Ott, the right fielder, signed as manager. And the Indians dismissed Peckinpaugh to the anonymity of a front office post and elevated twenty-four year old Lou Boudreau, crack infielder, to the badgered position as manager.

In the minor leagues, Columbus took the American Association pennant and beat out the Montreal club, International League winner, in the playoffs. Newark's Bears had won the International League regular race, but had been beaten by Montreal in the Governors Cup competition. Seattle won the Pacific Coast League play, and the Dixie Series fell to Nashville, Southern Association winner. Dallas won in the Texas League, while Wilkes-Barre won the Eastern League pennant. The Acipco team of Birmingham, Ala., won the National Amateur Federation title.

At the year's end league magnates were concerned over the future of the game, with many players being taken into the Army and the Navy, and the minor leagues in particular worried over their very existence. A majority of major leaguers were married, and thus further from being called to service. See RADIO PROGRAMS.

CASWELL ADAMS.

BASKETBALL. This court sport continued its merry way in 1941, breaking all records in the matter of attracting customers, and setting up two new champions—the teams of Long Island University and the University of Wisconsin.

L.I.U. concluded its brilliant campaign by coming from behind to whip Ohio University in the

final of the national invitation tournament at Madison Square Garden in New York City before a record crowd of 18,377 citizens. This tournament, in which Ohio U.'s Frank Baumholtz was voted outstanding player, attracted 70,826 persons and the regular Garden card drew 247,023 fanatics through the winter.

Wisconsin, having taken the Big Ten championship after finishing next to last the year previous, went on to beat Washington State, Pacific Coast champion, in the N.C.A.A. final at Kansas City, succeeding Indiana to the bauble. This N.C.A.A. tourney was best in history in point of crowds and gate receipts, drawing 45,000 and \$32,000 in five nights of play.

Other achievements of note were Dartmouth's fourth consecutive championship in the Eastern League; Duke's ascension to the Southern Conference tournament throne after eliminating North Carolina, the team with the best season record, in the first round; Tennessee's conquest of Kentucky in the Southeastern Conference playoff; the unbeaten surge of Arkansas in the Southwestern Conference; and Wyoming's dethroning of Colorado University in the Rocky Mountain Conference. The National A.A.U. title went to the Hollywood Twentieth Century quintet, while the Ohrbach A.A. won the Metropolitan honors for the third successive year. The Little Rock Flyers won women's honors, and among professional teams the Detroit Eagles were considered best.

BASUTOLAND. See BRITISH EMPIRE.

BAUXITE. See ALUMINUM; CHEMISTRY, INDUSTRIAL under *Metals*.

BAVARIA. See GERMANY under *Area and Population*.

BECHUANALAND. See BRITISH EMPIRE.

BEE CULTURE. See ENTOMOLOGY, ECONOMIC.

BETTER. See ENTOMOLOGY, ECONOMIC.

BEETS. See SUGAR.

BELGIAN CONGO. A Belgian colony in central Africa. Area, 902,082 square miles; population (Jan. 1, 1940), 10,328,400 natives (mainly of Bantu and Sudanese origin) and 27,791 whites (19,608 Belgians). Chief towns: Léopoldville (capital), Matadi, Elisabethville, Jadotville, Stanleyville, Coquilhatville, and Boma. Kiswahili is the language of the natives but Bengala and Kigwana are used commercially on the Upper Congo, and Kikongo is in use near the coast. Fetishism is the dominant religion of the natives but Christian mission work was being carried on. On Jan. 1, 1940, there were 518 mission centers and 3,831 missionaries (3,068 Catholic and 763 Protestant). Education (1940): 5,187 schools and 252,804 students.

Production and Trade. The chief agricultural products (with 1939 production, in metric tons) were palm oil (89,847), palm nuts (86,691), cotton (42,037), coffee (23,000 for 1939-40), copal (12,715), cacao, rubber, sugar, cottonseed (89,000, 1939-40), groundnuts, maize, bananas, fiber, timber, rice, and tobacco. Ivory produced in 1939 amounted to 64 tons. Mineral production included copper (122,649 met. tons, 1939), diamonds (10,900,000 met. carats, 1940), gold (494,642 fine oz., 1939), silver (2,085,000 fine oz., 1939), tin (7,600 long tons, 1940), cobalt, uranium, radium, and iron. Cattle raising is profitable in the districts free from tsetse flies. Trade (1940 estimated): U.S. \$40,000,000 for imports and U.S. \$60,000,000 for exports. In 1940, imports from the U.S.A. were valued at \$3,961,987 (\$2,481,584 in 1939); exports to the U.S.A., \$24,809,021 (\$1,582,073).

Communications. The river Congo and its tributaries form an important means of transportation to the interior. On Jan. 1, 1940, there were 47,641 miles of roadways, 3,106 miles of railway, 4,209 miles of telegraph line, 29 wireless stations, 4,000 miles of telephone line, and 1,381 river steamers and barges aggregating 219,490 tons. The interior airplane services extend over 4,757 route miles. Léopoldville is a terminus of Pan American Airways' commercial transport service (inaugurated during 1941) from New York and Baltimore, in the United States, to Africa by way of the northern coast of South America, a distance of 9,000 miles.

Government. Finance (1940 estimates): revenue 747,208,000 francs; expenditure 779,825,500 francs. The public debt on Dec. 31, 1939, totaled 5,841,941,679 francs. The administration is under the control of the Belgian minister for the colonies, aided by a colonial council of which he is the president. The Belgian government in exile at London is represented in the colony by a governor general (aided by a vice governor general, state inspectors, and six provincial commissioners). Governor General, Pierre Ryckmans (appointed September, 1934).

Ruanda-Urundi, Territory of. Two districts mandated to Belgium by the League of Nations. Area, 20,152 square miles; population (Jan. 1, 1940), 3,775,335, all natives except for 1,404 Europeans. Education (Jan. 1, 1940): 3,215 schools and 230,474 pupils. Capital, Usumbura. Cattle raising is an important industry. The chief products are maize, cotton, potatoes, groundnuts, tin, and gold. Trade (1939): 55,040,979 francs for imports and 83,854,738 francs for exports. Finance (1940 estimates): 51,052,500 francs for revenue and 49,514,600 francs for expenditure (Congolese franc equaled \$0.0226). Public debt (Dec. 31, 1939): 135,000,000 francs. The territory was united (Aug. 21, 1925), for administrative purposes, with the Belgian Congo and placed under the direction of a vice-governor.

History. Remaining loyal to the Belgian Government-in-Exile in London, the Belgian Congo during 1941 played an increasing part in the mobilization of African manpower and resources for the struggle with the Axis. Some 30,000 native troops under Belgian officers assisted the successful British drive into Ethiopia during the first half of the year (see WORLD WAR). At the end of the campaign, in which they lost 500 officers and men, the troops returned to the Belgian Congo. A force of 100,000 men was then trained to meet a prospective German drive into Africa. Modern arms and equipment for this army were sought in the United States. In October a U.S. military mission arrived in Léopoldville. The *Capetown Clipper* of Pan American Airways completed its first round trip between New York City and Léopoldville, Belgian Congo, on Dec. 17, 1941. The total mileage for the journey, which started at New York City on Dec. 6, 1941, was 18,290.

The Belgian and British Governments on January 21 signed important economic and financial agreements covering the Belgian Congo. The financial accord pegged the Congolese franc at about 176.625 francs to £1 sterling, and provided for the transfer of the Congo's gold production and foreign exchange to the Bank of England for payment in sterling, etc. Under the economic accord, the British Government undertook to purchase the following minimum quantities of Belgian Congo exports during the period Sept. 1, 1940, to Aug. 31, 1941: Copper, 126,000 metric tons; cotton, 20,000 long tons; copal, 7,000 long tons; peanuts, 2,500 long

tons; palm kernels, 15,000 long tons; palm oil, all supplies available for export of a certain standard. The Belgian Congo was to maintain existing import and export controls, the latter through a licensing system for blockade purposes.

See CUSTOMS, BUREAU OF.

BELGIAN LITERATURE. See DUTCH AND BELGIAN LITERATURE.

BELGIUM. A kingdom of Western Europe, occupied by German military forces in May, 1940. Capital, Brussels. King, Leopold III, who was crowned Feb. 23, 1934.

Area and Population. The districts of Eupen, Malmedy, and Moresnet, ceded to Belgium under the Versailles Treaty, were reannexed to Germany on May 19, 1940, leaving Belgium with an area of 11,393 square miles and a census population of 8,294,674 on Dec. 31, 1940 (8,386,553, estimated, on Dec. 31, 1938). The people are of two distinct races, the Flemings, of Germanic stock, and the Walloons, of Latin origin. Estimated populations of the chief cities on Dec. 31, 1938: Brussels and suburbs, 912,774; Antwerp, 273,317; Ghent, 162,858; Liège, 162,229. Births in 1940 numbered 110,323 (124,421 in 1939), deaths, 125,083 (109,365 in 1939).

Education and Religion. Primary, infant, and adult elementary schools on Dec. 31, 1938, numbered 13,438 with 1,222,164 pupils. There were 273 secondary schools of all kinds with 86,279 students, and four universities (at Brussels, Louvain, Ghent, and Liège) with 10,775 students. The majority of Belgians professing a religious faith are Roman Catholics. The official languages are French and Flemish.

Production. Manufacturing, mining, intensive agriculture, and commerce have enabled Belgium to support one of the densest populations of Europe (712 per square mile in 1938). Estimated production of the chief crops in 1939 was (in metric tons): Wheat, 349,000; barley, 51,100; rye, 349,400; oats, 724,200; potatoes, 3,323,200; beet sugar, 240,500 (1939-40); tobacco, 5,300; linseed, 25,100; flax, 46,700. Livestock as of Jan. 1, 1939: 1,689,680 cattle, 264,650 horses, 960,372 swine. Mineral and metallurgical production in 1940, with 1939 figures in parentheses, was (in metric tons): Coal, 25,596,000 (29,846,900); pig iron and ferroalloys, 1,788,000 (3,068,200); steel ingots and castings, 1,896,000 estimated (3,111,000). Output of briquets in 1939 was 1,525,190 metric tons; coke, 5,176,650; wrought steel, except semi-finished, 2,202,420. Among Belgium's principal manufacturing industries are glass, paper, cardboard, cement, cotton yarn, rayon, metal products, alcoholic beverages, furniture, etc. As a result of the German occupation and the cutting off of overseas trade, Belgium's productive system was extensively modified.

Foreign Trade. In 1939 imports of the Belgian-Luxemburg customs union totaled 19,690,000,000 Belgian paper francs; exports, 21,670,000,000. (One Belgian paper franc was equivalent to \$0.0337 in 1939.) Following the German conquest, trade was restricted to continental European countries, particularly those under German control. In the spring of 1941 Belgian clearing agreements were in effect as follows (dates of agreements in parentheses): Germany (July 10, 1940), Netherlands (Aug. 2, 1940), Italy and Albania (Sept. 24, 1940), Bohemia-Moravia (Oct. 1, 1940), Switzerland (Oct. 7, 1940), Sweden (Oct. 14, 1940), Yugoslavia (Nov. 13, 1940), Bulgaria (Dec. 9,

1940), Norway (Dec. 30, 1940), Hungary (Jan. 6, 1941), Denmark (Jan. 29, 1941), Government-General of Poland (Jan. 29, 1941), France (Feb. 4, 1941), and Rumania (Mar. 8, 1941). All these agreements provided for the clearing of trade payments through accounts, kept in reichsmarks, at the respective central banks and the German Clearing Office in Berlin. The various currencies were converted at the official rates of exchange in Berlin. Also see *History*.

Finance. The 1940 budget estimates anticipated total receipts of 12,350,000,000 francs and expenditures of 20,000,000,000, including 8,000,000,000 francs for defense. Following the German conquest, new taxes were imposed and new loans issued to offset dwindling income and the heavy cost of the German army of occupation (estimated at about \$302,000,000 annually). The public debt rose from 59,318,300,000 francs (domestic, 40,317,600,000; foreign, 19,000,700,000) on Dec. 31, 1939, to 74,393,000,000 francs on Dec. 31, 1940. During 1940 the internal short-term debt increased 11,296,000,000 francs and the internal funded debt 882,000,000 francs. The unit of currency for foreign exchange transactions was the belga, equal to five francs. After the German occupation the official exchange rate of the belga was fixed at 1 belga equals 0.40 reichsmarks (in U.S. currency, \$0.16).

Transportation. Previous to the German invasion, Belgium had 7,068 miles of railway line, 20,244 miles of highways, an extensive network of rivers and canals which carried about one-fourth of the total merchandise traffic, 8,313 miles of air routes in Europe and Africa (August, 1939), and a merchant fleet of 88 ships totaling 353,997 gross tons. In 1939, 9,524 vessels of 19,389,516 tons entered the port of Antwerp.

During the 18-day German blitzkrieg of May 10-28, 1940, all communications were disorganized, some 6,000 miles of highway and virtually the entire railway network were disrupted, and more than 100 railway stations and 1,425 bridges and tunnels were destroyed. It was indicated that much of this damage had been repaired by 1941. However the transportation system continued to suffer from British air attacks on communication centers.

Government. The Constitution of 1831, as amended in 1921, vested executive power in the King, acting through a Ministry responsible to Parliament. See YEAR BOOK for 1940, p. 63, for the governmental system existing at the time of the German invasion. When the Belgian army capitulated at the order of King Leopold III on May 27, 1940, the Belgian Government in Paris repudiated the King's action and assumed the right, granted by the Constitution, to exercise the King's powers while he remained a prisoner of war. The Belgian Government-in-Exile was transferred to London from Vichy, France, in October, 1940, after 10 of the 14 Ministers had resigned.

The composition of the Government at the beginning of 1941, was: Premier, Hubert Pierlot (Catholic); Foreign Affairs, Paul Spaak (Socialist); Finance and National Defense, Camille Gutt (non-party); Colonies and Justice, Albert de Vleeschouwer (Catholic). On May 20, 1940, Gen. Baron Alexander von Falkenhausen was named German military administrator of Belgium and the Netherlands. German military governors replaced the Belgian provincial governors, but the central administrative functions in Brussels were retained by the permanent chiefs of the Belgian governmental departments. For developments in 1941, see *History*.

HISTORY

Leopold Rejects New Order. The German military occupation of Belgium continued through 1941, intensifying the economic sufferings and political difficulties that followed the invasion of May, 1940 (see YEAR BOOK for 1940, p. 66-67). King Leopold III remained a prisoner of war in his castle at Laeken near Brussels. He was reported to have rejected repeated German offers to restore him to power if he would rule under German direction. Appeals by the former Socialist Cabinet Minister, Henri de Man, the pro-Nazi Rexist leader, Léon Degrelle, and others favoring collaboration with Berlin failed to budge the King.

There were unconfirmed reports that Leopold visited Hitler at Berchtesgaden early in the year to appeal for food for starving Belgians and for the release of Belgian war prisoners, also that he attempted to escape to England during the summer. At any rate the King's stubborn refusal to accept Hitler's New Order heartened the Belgian people in their struggle for independence and was reported to have caused a steady decline in the influence of the pro-German "collaborationists." The charges of treason, defeatism and fascism leveled against Leopold following his surrender to the Germans in 1940 were emphatically repudiated. Consult Emile Cammaerts, *The Prisoner at Laeken* (London, 1941). The German radio on December 6 announced that Leopold had married Mlle. Mary Lelia Baels, daughter of a former Belgian Cabinet Minister, on September 11. Leopold's first wife, Queen Astrid, was killed in an automobile accident in 1935.

Government-in-Exile. Meanwhile the Belgian Government-in-Exile at London on June 12, 1941, joined the other Allied Governments in a formal pledge to "continue the struggle against German or Italian aggression until victory has been won" and "mutually assist each other . . . to the utmost of their respective capacities." It also endorsed the inter-Allied resolutions of September 24 (see GREAT BRITAIN under *History*).

In December, 1940, all Belgian subjects between 19 and 38 years of age residing in free countries were called to the colors. Those responding were trained during 1941 in Canada, Great Britain, and the Belgian Congo. The Belgian Congo (q.v.) sent a military force to aid the British Imperial forces in the conquest of Italian East Africa and placed its great economic resources at the disposal of the Allied cause. In September the Belgian Information Bureau in New York reported that the free Belgian forces comprised an army of 100,000 in the Congo, another army in Britain, and nearly 200 pilots in the R.A.F. The Belgian merchant marine, reduced 40 per cent by enemy action, was helping to keep Britain supplied.

In April the Minister of War and Finance, Camille Gutt, went to the United States in connection with a suit brought by the Government-in-Exile against Vichy Government of France to recover \$280,000,000 in gold sent to Paris for safe keeping at the time of the German invasion. The gold was subsequently taken to Dakar, French West Africa, and then turned over by the French to the Germans. The new Minister of Colonies, M. C. Camus, was killed during an air raid on London in May. On August 7 Foreign Minister Paul-Henri Spaak of Belgium reached an agreement with the Soviet Ambassador in London for the resumption of diplomatic relations, which had been severed by the Soviet Government earlier in the year.

On September 11 the Government-in-Exile issued an official account of Belgium's involvement

and part in the war. The document revealed that German plans to attack Belgium and seize its air fields first became known on Jan. 10, 1940, through papers seized from two German staff officers whose plane crashed on Belgian soil. The Belgian Government, it was stated, informed the British, French, and Dutch authorities, but refused all suggestions that it compromise its neutrality by permitting British and French troops to occupy defense positions on Belgian soil. The Belgian leaders took the view that "preventive intervention by France and Britain was just what the Germans secretly were hoping for."

According to German-censored figures published in Brussels August 28, Belgian losses during the 18-day battle accompanying the German conquest in May, 1940, numbered 10,000 civilians and 7,500 soldiers killed; 18,583 soldiers were wounded and about 200,000 taken prisoner. Of the latter, 70,000 were said to be still in confinement. The report declared most of the 1,500,000 Belgian citizens who took refuge in France in May, 1940, had been repatriated. Another 25,000 remained in Great Britain and about 5,000 in French Morocco, Portugal, and the United States.

German Rule in Belgium. Unable to win the Belgian people over to collaboration with the Reich, the German administration resorted to increasingly harsh measures to curb their growing hostility, passive resistance, and active sabotage. Early in the year the Belgian provincial and municipal councils, described as "the last stronghold of the old politician spirit," were dissolved. A companion decree of March 7 provided for the removal of all burgomasters, aldermen, and officials over 60 years of age, effective June 30. This measure, according to the pro-Nazi *Journal de Charleroi*, "immobilized those men who are the strongest enemies of the New Order." Having dissolved all non-Nazi political parties, the Germans in June forced the pro-Nazi groups to merge in two official parties, the Rex for the Walloon districts and the so-called "Verdmassos" for Flanders.

Brussels Mayor Arrested. When Dr. G. J. Vandemeulebroeck, Burgomaster of Brussels, refused to resign under the 60-year-age-limit decree, and posted a proclamation attacking the illegality of the German administration, he was arrested along with the Brussels police commissioner and the proprietor of the printing office that published the manifesto. The City of Brussels also was punished by a fine of 5,000,000 Belgian francs (about \$200,000), levied on the individual citizens. A pro-Nazi Flemist nationalist, Dr. H. Elias, was appointed in Dr. Vandemeulebroeck's place. The same procedure was followed in many other cities. A German-appointed Minister of Interior was given broad powers of appointment and dismissal over the municipal schools, the police, the gendarmerie, aldermen, mayors, county commissioners, and governors of the provinces.

Economic Hardships. The economic consequences of the German occupation were equally galling to the Belgians. Throughout the year the average ration in Belgium was reported to be approximately one-third that prevailing in Germany or Great Britain. Reports from Belgium and from the Government-in-Exile in London all indicated serious effects upon the national health from persistent under-nourishment. Despite these starvation rations, Belgium was obliged to provide the occupying German army with rations equal to those in Germany, and in addition to pay costs of occupation. The shipment to the Reich of the country's raw materials and other stores, reduced industrial

operations to one-third the normal level. The food shortage and general unemployment enabled the Germans to obtain thousands of Belgian workers for German war industries. Many of those sent to the Ruhr and other industrial districts of Western and Northern Germany were killed or injured by British air raids. At the same time several hundreds of thousands of Germans and many commercial firms from the Rhineland were reported to have taken refuge in Belgium from the R.A.F. bombings.

Belgian Resistance. The systematic exploitation of all sources of wealth and materials by the Germans (see also FOREIGN TRADE above) was accompanied by further drastic measures against the Jews and all other anti-Nazi groups. The United Press reported from Brussels on January 20 that more than 40,000 Jews had been rounded up in Antwerp and Flanders, and that many of them were sent to concentration camps. All Masonic lodges and affiliated institutions were dissolved and their properties confiscated under a decree of August 26.

These developments contributed to the mounting violence of Belgian resistance to the occupation. A German soldier was shot to death in Laeken Park, Brussels, May 24. Hundreds of male residents of the suburb were arrested in reprisal. German military courts carried out a growing number of executions for espionage and sabotage. On July 21, Belgian's independence day, there were numerous anti-German demonstrations in Brussels and other cities, and Rexists and Flemish separatists were in some cases beaten. The Germans rounded up hundreds of demonstrators.

Arrests and executions increased during the latter part of the year. Several Belgian families were doomed for sheltering British fliers who crashed on Belgian soil. In Brussels alone, the Germans reported 12 death sentences for espionage and other anti-German activity up to September 19. Twenty-five inhabitants of the town of Tournai were seized as hostages following the assassination on September 17 of two German police officers and the Belgian Rexist leader of that district. The German military commander announced September 22 that a minimum of five Belgian political prisoners would be shot each time a member of the German police or army was killed by Belgians unless the killers were immediately discovered. Decrees of September 23 imposed the death penalty on any Belgian "committing political crimes of violence against individuals who cooperate in loyal fashion with the occupation authorities," and provided severe prison sentences for those boycotting or threatening harm to pro-Nazis or passive collaborators with the "new order."

These measures merely fanned the spirit of revolt. In mid-August Belgian labor conscripts, working on a German airdrome near Brussels, seized several hundred German rifles, half a dozen machine guns, many rounds of ammunition, and scores of hand grenades during a daring raid. Forty anti-Nazi newspapers were being published secretly in October, according to Belgian sources. Among them was a namesake of *La Libre Belgique*, famous underground patriot publication of the first World War. The German authorities on December 4 dissolved the Belgian National Legion of War Veterans and court-martialed 61 of its leaders for anti-German conspiracy.

Pursuing their efforts to create hostility between Walloons and Flemings, the Germans in July ordered the introduction of Flemish as a language of instruction in all faculties of the University of Brussels. Later 18 Flemish instructors were ap-

pointed to the staff, including three known for their pro-German activities during the first World War. When the university authorities objected to the three appointments, the university was forced to close early in December and ten of its officials were arrested. The Belgian Government in London on December 23 reported that sabotage had caused the temporary closing of coal mines in the Liège district, and that the jails were over-crowded with Belgians charged with anti-German activity.

See GREAT BRITAIN under *History*; LABOR CONDITIONS under *Employment*, etc.; LEND-LEASE ADMINISTRATION.

BENDIX STRIKE. See LABOR CONDITIONS under *Strikes*.

BENEFACTIONS, BEQUESTS. See PHILANTHROPY.

BERMUDA. An insular British colony, 677 miles southeast of New York. Included in its area are some 360 islands, of which 20 are inhabited. Area, 19.3 square miles, civil population (1939 estimate), 31,661 (12,172 white and 19,489 colored). Chief towns: Hamilton, the capital, 3,259 inhabitants; St. George. Vital statistics (1939): 23.02 per 1,000 for births and 10.1 per 1,000 for deaths. The islands form an important base for the British Navy. During 1940 sites for air and naval bases were leased to the United States (see below under *History*).

Production and Trade. Most of the 1,400 acres of land under cultivation bear from two to three crops a year. The chief products are onions, potatoes, lily bulbs, cut flowers, and green vegetables. Arrowroot and bananas are grown. A total of 25,521 tourists visited Bermuda during 1940. Trade (1939): £1,751,536 for imports and £115,656 for exports. The chief sources of 1940 imports were the United States (£599,626), Canada (£355,729), and Great Britain (£334,168). Bermuda is linked to New York by air service and is a port of call on the New York to Lisbon transatlantic air service. Shipping (1940): 3,128 vessels aggregating 13,304,639 tons entered and cleared the ports of St. George's and Hamilton (the large increase over former years was caused by the establishment of a convoy base in Bermuda during May of 1940).

Government. Budget estimates (1941): £419,965 for revenue and £372,349 for expenditure. Ordinary revenue and expenditure for 1940 amounted to £394,035 and £411,811, respectively. A £200,000 loan without interest was voted to Great Britain by the house of assembly. Bermuda has a representative form of government and laws are enacted by a legislature consisting of the governor (aided by an executive council of 4 official and 3 unofficial members), the legislative council (3 official and 6 nominated unofficial members), and an elected house of assembly of 36 members. Governor, Viscount Knollys (appointed Aug. 27, 1941).

History. The development of Bermuda into a major operations base for United States warships, seaplanes, and landplanes, with garrison protection, made rapid progress during 1941. The base sites announced in Washington Nov. 18, 1940 (see YEAR BOOK for 1940, p. 71), were modified somewhat. On January 22 the governor informed the house of assembly that Morgan's and Tucker's Islands in Great Sound would be leased to the United States as a flying-boat base. Subsequently about 74 acres of mainland in the King's Point sector across a narrow channel from Tucker's Island was obtained in exchange for the south shore of St. George's Island.

These areas in the Great Sound, or western, end of the islands were commissioned as a U.S. naval

base on March 1. The American flag was raised over Tucker's Island and construction work was begun with a ceremony attended by Bermudian and U.S. officials. The area of the naval base site totaled 112.78 acres, including Tucker's and Morgan's Islands (39.06 acres) and King's Point (73.72 acres). King's Point was set aside for marine barracks and equipment, while seaplane facilities were installed on the two islands. Facilities for servicing cruisers, destroyers, aircraft carriers, and submarines also were planned. The cost of all these naval installations was estimated at \$11,250,000. On July 1, 1941, the U.S. naval air base, called "Kindley Field," was formally commissioned.

Development of the U.S. army base in the Castle Harbor sector at the eastern end of the islands progressed at the same time. It included 266.24 acres on St. David's Island, designed for barracks, hospital, and general military facilities; 62 acres on Long Bird Island, providing airport facilities for both landplanes and seaplanes; and 60.24 acres on Cooper's, Nonsuch, and other small islands, for ammunition storage and other purposes.

The Anglo-American treaty covering the leasing of Bermuda and other bases was signed in London on Mar. 27, 1941, after negotiations in which a delegation representing the Bermuda government participated. The same day a secret session of the Bermuda assembly approved "the sacrifices involved" as a contribution to the Empire war effort. In a message to the British colonial secretary in London, the assembly recognized "that the terms of the agreement may bring grave changes in the economic and political and social life of this ancient and loyal colony."

Under special provisions of the Bermuda lease (see *The Department of State Bulletin*, Mar. 29, 1941, for text), the U.S. government: (1) agreed not to close the channels from Ferry Point Bridge to St. George's Harbor or from St. George's Harbor through Stocks Harbor to Tucker's Town without providing equally adequate navigation facilities; (2) acquired the right to install undersea and other defense devices in the entrance to Castle Harbor, but undertook not to close the channel through Castle Roads to the sea; (3) was authorized to build a causeway between Tucker's Island and King's Point without interfering with vessels navigating the channel; (4) obtained permission to fill in areas in the vicinity of Morgan's and Tucker's Islands and King's Point; (5) agreed not to interrupt highway communication between Hamilton Parish and St. George's Island, or to provide alternative facilities; (6) agreed not to use motor vehicles outside the leased areas without the permission of the Bermuda government, except in time of war or "other emergency." The house of assembly on April 30, passed a law authorizing the use of automobiles for work on the bases until the end of 1942, under conditions to be prescribed by the governor.

The heavy influx of American soldiers, sailors, marines, and construction workers into Bermuda caused an acute housing shortage, a rise in the cost of living, and some manifestations of discontent among the native laboring class. On June 6 the assembly unanimously agreed to the message from the governor recommending that up to 200 skilled and unskilled workers be brought into Bermuda from Barbados to fill urgent labor needs.

The resignation of Lieut. Gen. Sir Denis Bernard as governor was announced on Aug. 11, 1941. This was in accordance with the decision of the United Kingdom government that "in the present circumstances it is preferable that the governor of Bermuda should be a civilian." See ZOOLOGY.

BESSARABIA. See RUMANIA and UNION OF SOVIET SOCIALIST REPUBLICS under *History*.

BETATRON. See PHYSICS.

BILLIARDS. A really exciting chapter was added to the history of this ancient sport in 1941 by Willie Hoppe, fifty-three year old master who astounded his doctors as well as his foes by retaining the world's three-cushion championship in Chicago. A week before the tournament began in January, Hoppe was challenged by Jake Schaefer and while far ahead of Schaefer was stricken with pneumonia and great doubt was expressed about his playing again for months. Schaefer refused to accept the title by default, and after a sixteen-day postponement of his games Hoppe hopped from his hospital bed and appeared at the table.

Despite the loss of ten pounds, the magic in his cue was still there and he won thirteen straight games before veteran Welker Cochran stopped him. But no one else was equal to the task and Hoppe swept the table. In successive tournaments in 1940 and 1941 he had won thirty-three straight matches and thirty-six of thirty-seven.

Sharing the year's cue honors with Hoppe was Erwin Rudolph, of Cleveland, who captured the world's pocket billiard championship for the fourth time in his career in play at Philadelphia in November. Rudolph finished in a first place tie with Irving Crane and Willie Mosconi, but won the round-robin playoff in a decisive struggle against Crane.

BILLITON. See NETHERLANDS INDIES under *Area and Population*.

BILL OF RIGHTS. See FAIRS, EXPOSITIONS, AND CELEBRATIONS.

BIOLOGICAL CHEMISTRY. The pace of publication of important experimental data in the field of biological chemistry has greatly slackened during the past year. Because of the war much of the time and effort of our best investigators has been spent on projects backed by the Federal Government, and for obvious reasons the results of these researches have not been published. Some very important developments, however, have been made and the results of these experiments have been released. Especially is this true in the field of therapeutics.

Sulfa-drugs. To the long list of sulfanilamide drugs two new ones have been added—sulfadiazine and sulfaguanidine. (See MEDICINE AND SURGERY.)

In the two preceding YEAR BOOKS, this writer reported on the discovery of two germ-killing chemicals of an entirely different nature, gramicidin and penicillin. Reports of the use of these two substances on human patients were not then available, but during 1941 many papers were published describing their remarkable properties. (See MEDICINE AND SURGERY.)

Other Germicides. An even more potent germicide, bacteriophage, has been reported. This substance has been known for years and last year this reviewer reported its isolation in crystalline form by Dr. Northrop. During 1941 clinical experiments indicate that it is especially effective in staphylococemia (blood poisoning). The death rate in this series of cases was reduced from the usual 100 per cent to 67 per cent. When blood poisoning is in its first stage 80 per cent success was achieved with injections of this potent germicide. Work at Columbia also indicates a success of at least 45 per cent. Another agent of this group of polypeptides, tyrocidine, has been reported. Its properties at the present time are less known, however.

Vitamins. Publication of data on the isolation of new vitamins greatly slackened during 1941. Experimental studies on their chemical and physiological properties, structure, and synthesis, however, continue at a rapid pace. Especially is this true of biotin. In the laboratory of Dr. du Vigneaud, Department of Biochemistry, Cornell University Medical College, investigators have made important observations on the structure of this vitamin. Oxidation studies reveal that this molecule is so constituted as to yield adipic acid. This fact indicates that biotin contains the side chain, $\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{COOH}$, attached to one of the ring carbon atoms. Eliminating consideration of four membered rings, on this basis, we are led to structures indicating a fused thiophene ring fastened to urea with the side chain at position "a." With this formula as a model Dr. du Vigneaud has already reported a resynthesis of biotin from one of its degradation products.

Many important physiological studies on pantothenic acid have been made. It has been reported that a deficiency of pantothenic acid in the diet causes a retardation of tumor growth in mammals suffering from this affliction. Unfortunately, however, such a deficient diet causes such severe interference in the host's nutrition that the procedure offers no practical application in adjunct tumor therapy. The distribution of pantothenic acid in products of natural origin has been more thoroughly investigated. Dr. Folkers of Merck and Company has reported on new methods for its synthesis, and also on methods of synthesis of closely allied compounds and derivatives.

Much work has been done on the physiological properties of the antigray-hair vitamin, para-amino benzoic acid. It has been definitely shown that this compound inhibits the antibacterial action of sulfa-drugs. It has no effect, however, on antibodies in fresh defibrinated blood. To explain this fact it has been suggested that p-aminobenzoic acid is a necessary factor in the metabolism of various organisms. Recent evidence shows that not only is this true for bacteria but that it also plays an important role in autotrophic and heterotrophic plants. Also worthy of note is the confirmed observation that p-aminobenzoic acid is present in yeast. This would suggest, as pointed out by Woods, that this compound is a substance which acts as a co-enzyme in a phase of bacterial metabolism and is therefore an essential growth-substance for bacteria. Woods also suggests that the sulfa-drugs because of their structural similarity are able to substitute for the latter in the enzyme action and thus interfere with normal metabolism. Difficulties have been encountered in repeating Ansbacher's experiments on the graying of hair in rats. Dr. Emerson reports that he has been unable to obtain any evidence that p-aminobenzoic acid will either cure, or prevent, graying of rats. In his experience animals deficient in pantothenic acid invariably show marked graying before the expiration of the time necessary for the p-aminobenzoic acid to take effect. This would seem to place the cause on a pantothenic acid deficiency.

Certain other interesting observations on the chemistry of the vitamins have been reported. If foxes are allowed to over-indulge in a diet of raw fish they develop a disease identical with the alcoholic disease (Wernickes disease) caused in man by lack of vitamin B_1 . This fact indicates that in raw fish there is a substance which destroys the thiamin. These results have also been confirmed in the chick. The additional observation has been made that this condition can be reproduced after recovery from a previous attack. It has also been

noted that the inactivation of B_1 can occur within the feed mixture itself. The level of inactivation depends upon the length of time that the fish is in contact with the feed mixture.

Interesting results in the field of experimental tuberculosis have been obtained. It has been found that daily injections of crystalline vitamin C into tuberculous guinea pigs raises the tissue levels of ascorbic acid. This treatment increases the tolerance to repeated large doses of tuberculin and to retard the progress of tuberculosis. Fibrosis is more prevalent and caseation less marked in animals that received the vitamin. Continued administration of tuberculin and ascorbic acid give better results than the use of either alone. More favorable results are obtained in the chronic form than in the acute modification of the diseases.

Vitamin B_1 is now being used to make insulin-shock treatment for mental disease safer and more effective. By far the most dangerous complication which may occur in giving insulin shock treatment is when the patient goes into a state of "protracted shock" and fails to come out until damage to the brain has occurred. Study of such cases reveals that this condition occurs only after the medulla oblongata has been involved. In cases of patients who show a special tendency to this kind of shock vitamin B_1 will prevent it, if given regularly. The period of unconsciousness is also shortened.

Dr. Scudi has developed a method of stabilizing vitamin B_6 . He has observed that it forms a stable boron complex which does not cause the vitamin to lose its activity. Dr. Patek and Dr. Post report that a diet of cheese and vitamins of the B complex will cure cirrhosis of the liver, a hitherto fatal condition once known as "drunkard's liver." Vitamin A has been found to be of importance in the cure of tuberculosis. Intensive B_1 and C therapy causes spectacular healing of multiple bed sores. It has been observed that prolonged deficiency in riboflavin leads to neurologic abnormalities. Riboflavin has also been found to substantially protect rats against liver cancers especially when fed with casein. Nicotinic acid decreases the peristaltic action of the stomach and intestines. This is counteracted by mositol. Thus these two factors of the B complex are directly concerned with gastro-intestinal mobility and a proper balance is essential. The latest addition to the long list of substances that can cause trouble for patients with allergies is synthetic vitamin C. A new process has been developed by Merck and Co. of Rahway, N.J. for the preparation of vitamin B_6 . It has also been reported that the amount of this vitamin can be determined accurately by a new colorimetric method.

Steroids. Activity in the field of the steroids still continues. Many results, however, because of their bearing on national defense are not available for publication at this time. Of those researches results of which have been released the following may be noted. In the research laboratories of Squibb & Co. a new phytosterol, campesterol, has been isolated from rapeseed oil, soya-bean oil, and wheat-germ oil. The analysis indicates a $\text{C}_{28}\text{H}_{48}\text{O}$ molecule. It has not been found in cottonseed oil nor in tall oil. From the chromic acid oxidation products it can be inferred that campesterol is an isomer of 22, 23 dihydrobrassicasterol, which differs only in the optical configuration on C_{22} . It forms a characteristic i-methyl ether.

The year witnessed the publication of results from the Frick Chemical laboratories of Princeton University which show that when modern theories of optical activity are applied to steroids a relationship between optical rotatory power and constitu-

tion can be established. Thus a novel method of calculating the optical rotatory power of steroids has been developed and has proved to be a powerful tool and aid in structure determination.

Much work has been published on oestrogenic activity and molecular structure. Experiments show that in the field of synthetic substitutes hexoestrol and diethyl stilboesterol are very important drugs. They are highly active oestrogens when administered either orally or hypodermically. They promise to be a true innovation in therapy. Hundreds of cases with menopausal symptoms have been treated and results seem entirely comparable with natural oestrogenic hormones. Nausea and vomiting can be relieved when given orally by an enteric coating. Stilboesterol in the form of a cream has been found to be markedly effective in the treatment of pruritus vulvae. It has also greatly aided patients suffering with engorgements of the breasts, gonorrhoeal vulvovaginitis in children, chronic arthritis, lack of mammary development, etc. Certain harmful effects with stilboesterol, however, have been reported. When continually injected into mammals, hyperphasia of the adrenal and pituitary glands results. No effect is found however on the pancreas or liver. It also tends to cause scrous or milk excretion. Records show also that in some cases especially in mice continued use elicits mammary carcinoma. In dogs continual use also produces neutrophilia and anaemia.

Cancer Research. Certain results in the field of cancer research should be noted. Dr. Lawrence at the University of California has used with success artificially radioactive compounds in the treatment of various forms of cancer. Striking results have been reported in cases of lymphosarcoma. Also from the same laboratories there comes most encouraging results on the use of the cyclotron. Many startling cures have been produced by neutron bombardment. Dr. Rhoads from the Memorial Hospital in New York City has found that a dye called butter yellow produces cancer in the livers of rats. If, however, these animals be fed a diet of casein and riboflavin a protection follows, and cancer does not develop. From Mt. Sinai Hospital Dr. Lewisohn reports that the very malignant growth of transplanted breast cancers in mice can be stopped by pantothenic acid, yeast extract, and riboflavin.

Further work on the carcinogenic activity of certain organic compounds has been reported. It is now known that both dibenzanthracene and methyl cholanthrene will produce intestinal carcinoma following oral administration. New compounds have been found which will produce cancer. Thus, Dr. Lewisohn and W. E. Bachmann report that 5-n-propyl-9-10-dimethyl-1, 2-benzanthracene, 4-methyl cholanthrene and 5-methyl cholanthrene are carcinogenic. Two glycine compounds 3-methyl cholanthrene-meso- α , β -endo-succinoylglycine and the corresponding 1, 2, 5, 6-dibenzanthracene derivatives have been reported by these workers as carcinogenic agents with latent periods approximately the same as their respective hydrocarbons.

Miscellaneous Discoveries. In concluding this review, certain special discoveries should be mentioned: Dr. Northrop of the Rockefeller Institute has purified diphtheria antitoxin and obtained it in crystalline form. Diphtheria toxin forms a precipitate when mixed in certain proportions with serum from a horse which has been immunized against the toxin. This precipitate is a compound of the toxin and antitoxin. Separation of the antitoxin from this complex has been achieved and the crys-

talline product is strictly homogeneous in every test.

In the field of the amino acids Dr. Lucas has found that a method can be developed for the quantitative removal of cystine from keratin hydrolyzates. Cuprous oxide is the specific reagent used. The synthesis of polypeptides bearing long aliphatic chains has been announced. Surface film studies have been carried out. The stearyl and palmitoyl derivatives of diglycylglycine have been prepared.

Starch has been separated into its two constituents α -amylose and β -amylose. In this work the preferential adsorption of β -amylose on cotton was taken advantage of. Preliminary experiments in Dr. Pacsu's laboratory show that both α and β -amyloses possess identical specific rotations. So far the only chemical difference exists in the complete absence of phosphorus in β -amylose and the presence of the element in α -amylose. By means of a solution in pyridine, Dr. Pacsu and his coworkers have been able to prepare certain starch derivatives. These compounds so obtained are thermoplastic, yielding clear, glass-like substances which promise to be of importance to those interested in plastics, resins, etc.

Upsetting previous ideas of how the body uses iodine, an element known to be essential to health, Dr. Asher S. Chapman, of the Mayo Clinic, has discovered that the body can use this element even when the thyroid gland has been removed. Thyroxine, the powerful hormone produced by the thyroid gland, contains iodine and it has generally been thought that the effects of iodine on the body and the body's need for it were determined by this gland. Animals whose thyroid glands had been removed, Dr. Chapman found, lost more weight, utilized their food more poorly, drank more water and had a significantly lower basal metabolic rate when kept on diets very low in iodine than when given adequate amounts of iodine. The body, it appears, from these studies, not only can use iodine when there is no thyroid gland to turn it into thyroxine for stimulating various body processes, but even may make a compound like thyroxine in tissues other than the thyroid gland.

A cure for athlete's foot of great promise has been announced by Dr. Francis, medical director retired of the U.S. Public Health Service. It consists of three parts phenol to one part camphor.

Prevention of influenza epidemics may be possible by spraying propylene glycol into the air of schools, barracks, etc. Dr. Zellah of the University of Pennsylvania has found that such a mist protects mice.

The introduction of the pellet method by Dr. Parkes has made possible a much more efficient administration of many of the crystalline hormones. Studies have been made of the rates of absorption of these compounds. The rate decreases rapidly with time. The pellets become invested with a thin non-adherent tissue capsule. Oestrone and oestradiol show relatively very slow absorption. Their esters and testosterone propionate are absorbed even more slowly.

See CHEMISTRY, PURE.

EVERETT S. WALLIS.

BIOTIN. See BIOLOGICAL CHEMISTRY under *Vitamins*.
BIRDS. See FISH AND WILDLIFE SERVICE; ZOOLOGY.

BIRTH CONTROL. Birth control centers and services continued to show a steady growth in the United States in 1941. At the close of the year there were 746 centers in the country as opposed to 606 in 1940, all medically directed; with 176 in hospitals,

252 in public health departments, and 318 extramural. Of the total number, 331 were supported wholly or in part by public funds, which included those under health departments or in hospitals.

The number of physicians listed with the Birth Control Federation as willing to advise patients referred to them for contraceptive advice grew to almost 3,000. In both centers and referral services, the majority of patients are indigent or in very low-income brackets. A new pamphlet by Drs. Robert L. Dickinson and Woodbridge E. Morris, "Techniques of Conception Control," was mailed to 53,900 physicians, public health officers, and medical students during the year. Alabama announced in January, 1941, that contraceptive advice had been included in the services of its State Health Department, joining North Carolina and South Carolina in providing child-spacing information under Health Department direction.

New State groups were organized in two more States, bringing the total number of State Leagues affiliated with the Birth Control Federation to 34 at the close of 1941. During the year a number of State organizations adopted the name "Planned Parenthood." This followed the precedent of the British organization which, in 1939, changed its name from "National Birth Control Association" to "Family Planning Association," as more indicative of its objectives. The Federation took part, as a sponsoring organization, in the Conference on Tomorrow's Children held at Nashville, Tenn., and at Harvard Summer School, Boston, Mass. As a kindred group it participated in the National Conference of Social Work. Nineteen affiliated State Leagues were members of and took part in State Conferences of Social Work during the year.

In only two States, Connecticut and Massachusetts, have court decisions halted clinic service to the under-privileged. A bill which would have made it legal for physicians to advise patients on contraceptive methods where medical indications existed was introduced in the Legislature of the State of Connecticut, and passed the House by a vote of 164 to 64, but was defeated in the Senate by 23 to 9. Dr. Wilder Tileston, Clinical Professor of Medicine at Yale University Medical School, applied to the Superior Court of New Haven County for a declaratory judgment as to his right to advise contraceptives in the cases of three women whose physical condition would make pregnancy hazardous or fatal. The case was referred to the State Supreme Court, where it was pending at the close of the year. Dr. Tileston's action was taken in an attempt to secure from the courts of the State a measure of medical freedom.

In Massachusetts a special poll of a large number of voters, sponsored by the Massachusetts Mothers' Health Council in 1940, had shown that 82 per cent of those voting were in favor of giving physicians the right to prescribe contraceptives when pregnancy was contraindicated. An initiative petition of 45,000 names was sent to the Legislature in 1941, presented in the form of a bill which proposed to amend the existing prohibitive statutes, (H. 2,035). The question as to whether a religious issue was involved in the bill was referred by the Legislature to the State Supreme Court, which ruled on May 19, by unanimous vote, that no religious issue was involved. The Legislature voted on the bill on June 4th. It was defeated by 133 to 77 in the House, and 18 to 16 in the Senate. An additional 5,000 signatures on the initiative petition were secured and it will go to the voters in 1942.

The Federal Trade Commission continued to

prosecute manufacturers of contraceptives who were using the mails to sell their products by making false therapeutic claims in regard to their effectiveness or lack of possible injury to users.

The Federation in 1941 raised \$274,538 in gifts. Contributions to the organization are deductible from Federal Income taxes. The program for 1941 had, as its major objectives, the inclusion of contraception in public health services in six States, expanding and broadening of medical education, building up the referral list of doctors to whom women in rural areas or those without clinical services can be sent, and general public information and education.

Australia. Birth control clinics continued their work. Vital statistics showed a sharp increase in the number of marriages with a slight consequent rise in the birth rate.

England. Centers continued to operate, some in the provinces having had extraordinary escapes from bombing attacks. The headquarters of the Family Planning Association were moved from London to Bournemouth.

France. The drastic regulations against birth control and abortion were reinforced in 1941, but the birth rate was further reduced, in part due to the retention by Germany of over 1,500,000 prisoners of war.

Germany. Efforts to raise birth and marriage rates continued and illegitimate births were stimulated and encouraged. Legal restriction of the distribution of contraceptives failed to prevent their sales, which were said to be in large volume.

India. Progress in organization of birth control work and centers went on under an organizer of the British Family Planning Association. It was announced that such work was most necessary in view of the fact that India's population in 1940 had risen to 400 million, an increase of 18 per cent in 10 years.

Japan. Rigorous suppression of all birth control activities was ordered as part of the government policy to force a higher birth rate by official decree. Though the birth rate did not increase materially, infant mortality rates rose and malnutrition was prevalent.

New Zealand. The Family Planning Association continued work, and resolutions asking for a course in contraceptive technique at the only medical school in New Zealand were passed at many meetings.

Norway. All birth control centers were closed by the Germans following their occupation of the country.

Sweden. The Society for Sexual Enlightenment continued work through the year and the Stockholm clinic advised many women. Owing to the war, the work of the Royal Population Commission was temporarily suspended.

Puerto Rico. There was a steady increase in contraceptive services under direction of the *Asociacion pro Salud Maternal e Infantil* and other health agencies. The Interdepartmental Committee appointed by President Roosevelt to survey the island reported that over-population was its greatest problem and that "birth control should be a major function of the Insular Department of Health as the key to the entire health situation in Puerto Rico."

Europe. Because of war conditions and of Germany's occupation of so much of the continent little news on birth control work was obtainable during the year, but constant and relentless pressure on the conquered areas, food-rationing, and requisition of supplies by Germany resulted in

lowered birth rates—a form of birth control which is dysgenic in the extreme.

D. KENNETH ROSE.

BIRTHS, BIRTH RATES. See BIRTH CONTROL; SCHOOLS; VITAL STATISTICS; major countries under *Population*.

BISMARCK ARCHIPELAGO. See AUSTRALIA.

BITUMINOUS COAL DIVISION. This Division of the Department of the Interior administers the Bituminous Coal Act of 1937, which became effective on Apr. 26, 1937. Under this law, the Division has established minimum prices at the mine and marketing rules and regulations for the sale of bituminous coal by producers and their sales representatives as a means of stabilizing coal markets. This regulatory structure was designed to prevent further continuation of the destructive price cutting which had existed within the industry for more than a decade and to restore interstate commerce in coal to a fair competitive basis.

Participation in the market regulatory program is voluntary under the Coal Act. A producer may choose whether or not he becomes a member of the Bituminous Coal Code promulgated under this law. As a Code Member, he is subject to minimum and maximum prices and marketing regulations established by the Division. If a producer does not join the Code, he may continue to sell his coal at any prices he chooses, but his sales are subject to a 19½ per cent tax imposed by the law. Approximately 15,500 producers, or about 96 per cent of the nation's total, have become Code Members. These Code Members produce practically all of the commercial coal mined in the United States.

Minimum prices became effective on Oct. 1, 1940, and the Division is authorized by the Coal Act to establish maximum prices when necessary to protect the coal consuming public. In September, 1941, it opened a proceeding to ascertain whether maximum prices are necessary, and if so, what the rates should be. The proceeding had not been completed by the end of the year.

The minimum price schedules were established after extensive public hearings, in which consumers and consuming interests as well as producers and producing and other interests were given an opportunity to participate. The schedules show the minimum price for the shipment to particular freight destinations of each kind, quality, and size of coal produced by each of the 15,500 Code Members' mines. A single mine often produces numerous different sizes and grades of coal, and the schedules cover minimum prices for shipments of these to the approximately 30,000 freight destinations in the United States and Canada which receive bituminous coal. The minima for the first year of market regulation averaged \$2.01 per ton at the mine for the nation. However, the actual market prices at which producers sold their coal during this period averaged \$2.13 per ton at the mine.

The Division is constantly adjusting its schedules so that they will appropriately reflect changes in the coal producing industry and its markets and maintain a sound regulatory structure. Compliance matters also present a Division function no less significant than the original job of establishing minimum prices. Hearings are held on complaints alleging violations, and where it is found appropriate, penalties are imposed as provided by law. Penalties include the issuance of cease and desist orders; the revocation of Code Memberships which subject producers' sales to the 19½ per cent tax; the suspension or revocation of distributors' registrations.

The coal industry itself bears a large share of the

responsibility for administering the Coal Act. The industry acts through the Bituminous Coal Producers' Boards for each of the 22 districts throughout the country which represent the industry in matters arising before the Division and otherwise aid in carrying out the purposes of the Coal Act. All of the members of each board, except the one representing mine employees, are elected by the producers.

Consumers' interests are represented in proceedings before the Division by the Office of the Bituminous Coal Consumers' Counsel, an agency entirely independent from the Division.

The Bituminous Coal Act originally was administered by the National Bituminous Coal Commission, an independent agency comprised of seven commissioners. Under the Reorganization Act of 1939, the Commission was abolished and its powers and functions were transferred to Secretary of the Interior Harold L. Ickes for administration by such agency as he might determine. See CONSUMERS' COOPERATIVES.

DAN H. WHEELER.

BLACKLIST, U.S. See COLOMBIA, COSTA RICA, CUBA, GUATEMALA, under *History*; COORDINATOR OF INTER-AMERICAN AFFAIRS, OFFICE OF; FASCISM, FINANCIAL REVIEW under *Foreign Funds Control*, PAN AMERICANISM; UNITED STATES under *Latin America*.

BLACKOUTS. See ARCHITECTURE; ILLUMINATION, PHOTOGRAPHY under *Military Photography* FOR **BLACKOUT PAINTS**, see CHEMISTRY, INDUSTRIAL.

BLIND AND HANDICAPPED, Aid to the. See CHILDREN'S BUREAU; SOCIAL SECURITY BOARD.

BLITZKRIEG. See WORLD WAR; MILITARY PROGRESS **BLOCKADE.** See WORLD WAR; SHIPPING; and the countries affected, as BELGIUM, DENMARK, EIRE, FINLAND, FRANCE (and colonies), GERMANY, GREAT BRITAIN, GREECE, NETHERLANDS, NORWAY, RUMANIA, SPAIN, SWEDEN, SWITZERLAND, TURKEY. **BLOOD POISONING.** See BIOLOGICAL CHEMISTRY under *Other Germicides*.

BOBSLEDDING. The combination of Paul Dupree and Tuffield Latour dominated the bobsledding game in 1941, when this Saranac Lake, N.Y., duo made successful defenses of the National A.A.U. and North American two-man titles and also added the Adirondack Association crown for good measure. Francis Tyler's sled, with E. H. Varno, Pat Martin, and William D'Amico riding with him, won the National A.A.U. four-man title, while the Republic Miners, composed of William Linney, John Kerr, William Stacovich, and Angus Clain, won the North American. The National junior four-man went to Charles Keough, Patrick Buckley, Harold Murphy, and Bob McKillip, while the junior two-man honors were taken by Wightman Washbond and Adrian Aubin.

BOHEMIA AND MORAVIA. Two former provinces of Czechoslovakia, which after being shorn of their Sudeten districts by the Munich Accord of Sept. 29, 1938, were occupied by German troops on Mar. 15, 1939, and proclaimed a Protectorate of the Reich the following day. Capital, Prague.

Area and Population. The Protectorate has an area of 19,058 square miles (Bohemia, 12,525; Moravia, 6,533) and a population estimated at 6,804,875 on Jan. 1, 1939 (Bohemia, 4,472,353; Moravia, 2,332,522). The inhabitants are Czechs except for a small German minority. The chief cities, with their 1937 populations, are: Praha (Prague), 962,200; Brno (Brunn), 291,800; Moravská Ostrava, 178,099 in 1935; Plzeň (Pilsen), 124,353 in 1935.

Production, etc. See YEAR BOOK for 1939, p. 181-182 for statistical data on Czechoslovakia before the partition. Little statistical information on Bohemia and Moravia has since become available. Agriculture, manufacturing, forestry, and commerce are the principal occupations. Cereals, corn, potatoes, beet sugar, tobacco, and flax are the chief crops. Leading industrial products: Arms, rayon and other textiles, wood pulp, cement, shoes, glass, leather goods, iron and steel products, and innumerable others. Western Bohemia is one of the leading industrial areas of Europe. The Protectorate is an important source of coal, iron ore, salt, zinc, and antimony.

Finance. The budget for the autonomous administration of the Protectorate in 1939 was: Receipts, 4,638,000,000 crowns; expenditures, 4,902,000,000 crowns (1 reichsmark equalled 10 crowns). An annual assessment of 2,000,000,000 crowns was levied on the Protectorate by the Reich in 1939; according to a Berlin dispatch of Jan. 2, 1941, this sum was virtually doubled in a new German-Czech agreement concluded at that time.

Government. The Berlin Cabinet's decree of Mar. 16, 1939, establishing the Protectorate, stated that Bohemia and Moravia "belonged henceforth to the territory of the Great German Reich." Germany assumed direct control of defense, foreign affairs, communications, transportation, customs, and currency, but declared the Protectorate autonomous in other matters, with its own organs and officials. However the decree provided that the Protectorate's prerogatives were to be exercised "in accordance with the political, military and economic importance of the Reich." The head of the Czech Government was required "to have the confidence of the Fuehrer and Reich Chancellor for the discharge of his duties." The German Chancellor appoints a "Reich Protector in Bohemia and Moravia," who as Hitler's representative and as delegate of the Reich Government "has the task of seeing that the lines of policy laid down by the Fuehrer . . . are observed." The Protector was empowered to dismiss all members of the Protectorate's government, reject its measures, and prevent the promulgation of its laws, decrees and orders as well as the execution of administrative measures and judicial decisions. The decree gave the Reich Government blanket authority to "promulgate orders applicable to the Protectorate in so far as the common interest demands it."

All German inhabitants of the Protectorate are German nationals and Reich citizens, subject to German jurisdiction and to "the regulations for the protection of German blood and German honor." Other inhabitants were declared "nationals of the Protectorate." Chancellor Hitler on Mar. 18, 1939, appointed Baron Constantin von Neurath, former German Foreign Minister, as Reich Protector, with headquarters at Prague. Karl Hermann Frank, a leader of the Sudeten German agitation against the Czechoslovak Republic before the Munich Accord, was appointed State Secretary of the Protectorate, with control over both German and Czech police. Dr. Emil Hacha, elected President of the Czechoslovak Republic by the National Assembly Nov. 30, 1938, and signer of the capitulation agreement of Mar. 15, 1939, remained in office as President of the Protectorate. The government of the Protectorate, as reconstructed Apr. 27, 1939, was headed by Gen. Ing. Alois Eliáš. Over and above the rule of the Reich Protector and the puppet government of the Protectorate was the rule of the German secret police and military commanders.

Measures placed in effect during 1939 and 1940 under the decree of Mar. 16, 1939, completed the transformation of Bohemia and Moravia into an authoritarian state completely subservient to Berlin and serving as a political and economic appendage of the Reich. A customs and monetary union with Germany was established Oct. 1, 1940, with the reichsmark replacing the Czech crown as legal currency. The National Unity party (Czech), a rival Czech Fascist party known as the Vlájka, and the National Socialist party (a branch of the German Nazi party) were the only legal political groups permitted. All were under close German supervision. See below for developments in 1941.

HISTORY

The German attack upon Russia on June 22 and the revived hope for an Allied victory that grew out of the stubborn Russian resistance caused the smoldering hatred of the Czechs in Bohemia and Moravia to break out in intensified sabotage and sporadic revolts. The Germans responded with wholesale executions and other savage reprisals that ended Berlin's last hope of winning Czech collaboration with Hitler's "new order" in Europe.

Nazi Policy Fails. Czech collaboration became increasingly important to the Germans as the strain of the war increased. British bombing of Western Germany forced the Reich to depend increasingly upon the war industries and electric power of Bohemia and Moravia. Some hundreds of thousands of women and children were evacuated to the Czech districts from the bombed areas of Western Germany. Grain stores were similarly transferred. Due to Bohemia-Moravia's strategic position, its railways and other communications were of vital importance to the movement and supply of German armies in Eastern Europe. Moreover the 150,000 or more German troops in occupation of the country were needed on the Reich's expanding battle fronts. The Nazis also made use of the alleged "normal conditions in the Protectorate" in their propaganda among other nations on behalf of the "new order" in Europe.

For these reasons the Germans during the first half of 1941 continued their use of combined persuasion and force to win Czech acquiescence to permanent German rule (see YEAR BOOK for 1940, p. 77 f.). They sought to impress the Czechs with the economic and other advantages of the "new order." At the same time the Czechs were warned that their collaboration would no longer be welcome if it was withheld until after the final German victory over Britain.

Meanwhile the Nazis waged ruthless warfare against all individuals and groups seeking to preserve Czech nationalism. On Jan. 9, 1941, ex-President Eduard Beneš of Czechoslovakia, Jan Masaryk, son of the founder of the republic, and 47 other Czech patriots were deprived of their citizenship and estates. Most of these men were in exile in London and elsewhere. About the same time all Jews living in Czechoslovakia were required to turn in their jewels and security holdings to a public purchasing agency. The persecution of Catholic priests, intellectuals, and of government officials of the Protectorate suspected of loyalty to the republic was increased.

Nazi methods of force and persuasion, coupled with growing economic hardship, only served to deepen Czech hostility. A steady stream of Czechs fled to the Allied countries to enter the Czech military forces. Mass boycotting of German-sponsored events continued. The illegal Czech patriot newspaper *V Boj* circulated secretly and the BBC

broadcasts were widely listened to despite hundreds of arrests. Sabotage and the slowdown were practised regularly in factories. There was widespread violation of rationing and other decrees.

Spread of Disorders. After Hitler's attack upon Russia, the Czechs' underground warfare against their German rulers became much more violent. Explosions and fires of mysterious origin occurred in many munitions factories, oil refineries, and other vital war industries. Late in September an explosion wrecked the Lutín (Moravia) chemical plant, killing 95 persons, mostly Germans. The Skoda arms factory was badly damaged by fire. Strikes spread notwithstanding the arrest and execution of some of the leaders. Railway tracks were torn up, and telegraph and telephone lines and electric cables cut.

To check this spreading revolt, Berlin on September 27 announced the "temporary" replacement of Baron von Neurath as Reich Protector for Bohemia and Moravia by Reinhard Heydrich, right-hand man of Heinrich Himmler, chief of the German secret police (Gestapo). Heydrich immediately declared a state of emergency over six important districts of the Protectorate including Prague. On the same day Gen Alois Eláš, Premier of the puppet Czech Government in the Protectorate, and many other Czech officials and leaders were arrested for "preparation to commit treason." A German court-martial on September 29 ordered the immediate execution of 24 Czech leaders, including three former generals, accused of plotting an early revolt.

For weeks thereafter the German police continued to round up Czech patriots and other suspects, including many influential members of the Protectorate Government, while summary courts working at top speed condemned scores to death. Berlin announced the execution of 58 Czechs on September 30, 39 (including 2 more generals and 11 other officers of the former Czechoslovak army) on October 1, 18 on October 2 (including Otakar Klapka, Mayor of Prague). Day after day German firing squads added new names to the long list of Czech martyrs. By December 1, 414 executions had been announced by official German sources. Anti-German sources placed the number of Czechs slain during Heydrich's brief rule at between 2,000 and 4,000. As of December 1 Heydrich ended the state of civil emergency in four of the six affected districts. Restrictions imposed in Prague and Brunn remained in effect.

General Eláš was among those condemned to death, but won a reprieve through confessing his partial guilt, according to official German dispatches. These sources announced that the Germans had uncovered a widespread secret society engaged in "liquidating" German sympathizers and helping Czech patriots escape abroad. The society was said to have had the assistance of many Czech officials of the Protectorate Government who ostensibly were cooperating with the Germans. It included many former army officers, civil servants, municipal officials, and others from all ranks of life.

The blood purge was accompanied by an extension of the state of emergency to new districts, the confiscation of all radios in certain towns and districts, the closing of more Czech schools and the arrest of teachers, and on October 13 the dissolution of the historic Czech Sokols (athletic societies) and their affiliated organizations.

See CZECHOSLOVAKIA and GERMANY under *History*; LABOR CONDITIONS under *Union Movements and Wages*; SLOVAKIA.

BOLIVIA. A republic of South America. Sucre is the seat of the Supreme Court and nominally the capital, but La Paz, the largest city, is the actual seat of the government.

Area and Population. Taking into account the Chaco boundary settlement of 1938 (see *YEAR BOOK*, 1938, p. 131 f.), Bolivia has an area estimated at 537,792 square miles. The population on Dec. 31, 1939, was estimated at 3,457,000, divided racially as follows: White, 13.08 per cent; mestizo (mixed), 27.51; Indian, 52.34; others, 7.07. Foreigners in Bolivia in 1940 included about 5,000 Germans and German-Bolivians, 475 citizens of the United States, and about 500 British. Estimated 1936 populations of the chief cities were: La Paz, 200,000 (250,000 in 1940); Cochabamba, 52,323; Oruro, 44,826; Potosí, 35,900; Santa Cruz, 31,300; Sucre, 27,508. Spanish is the language of the educated classes. The Indians speak mainly Quechua and Aymara.

Education and Religion. The illiteracy rate, which was 83.5 per cent for that part of the population seven years and over in 1900, remains high. The school enrollment in 1936 was: Elementary, 73,854; secondary, 5,522; special schools, 4,615; universities, 1,482. New schools opened during 1940-41 included 97 rural schools, a national vocational school at La Paz, a rural normal school at Portachuela, the School Center of Rural Cooperation at Sapocó, the Indian Education Center at Huachacalla, and experimental schools in La Paz and the departmental capitals. Roman Catholicism is recognized as the State religion. Public exercise of other forms of worship is guaranteed.

Defense. Military training is compulsory. As of Jan. 1, 1941, the active army numbered 9,600; trained reserves, 82,187, active air force, 160. The 1941 defense appropriations totaled 145,000,000 bolivianos. Also see *History* below.

Production. Mining is the most important industry, although agriculture and stock raising support the bulk of the population. Mineral products accounted for over 95 per cent of all exports in 1940, with tin of outstanding importance. Mineral exports in 1940 in fine metric tons, with the value in pounds sterling in parentheses, were: Tin, 38,531 (£9,934,905); wolfram, 2,510 (£692,512), antimony, 11,753 (£488,183), silver, 175 (£441,130); copper, 6,660 (£348,829); zinc, 12,197 (£352,360), lead, 11,663 (£284,134); gold, 366 fine kilograms (£87,108). Crude petroleum production in 1940 was approximately 110,000 bbl., while imports were 38,867 metric tons (see *History*). The principal crops are wheat, quinoa, corn, rice, barley, sugarcane, cotton, coca leaves, tobacco, and coffee. Alcohol and beverages, food-stuffs, textiles, and clothing are the chief manufactures.

Foreign Trade. Imports in 1940 were valued at £5,700,000 (in pounds sterling) of 13.33 bolivianos of 18 pence per pound) against £4,848,358 in 1939; exports, £12,877,211 (£8,687,008 in 1939). See *Production* for chief export items. In 1940 tin exports were 39.4 per cent greater in volume than in 1939, while in value they exceeded by 12.8 per cent the value of all 1939 exports. Textiles, wheat, flour, sugar, live animals, and machinery were the leading imports. In 1939 the United States supplied 22.7 per cent of all imports by value, Peru 21.8 per cent, Argentina and Germany 12.4 per cent each. Great Britain took 64.4 per cent of the exports (mostly tin ore for refining), Belgium 16.8 per cent, the United States 9.1 per cent.

Finance. Budget receipts in 1940 totaled 599,-

787,515 bolivianos (516,496,067 in 1939). Expenditures were estimated at 505,000,000 bolivianos (about 455,266,000 in 1939). The 1941 budget estimates balanced at 727,000,000 bolivianos. The public debt on June 30, 1941, was divided as follows: Foreign, 60,816,923 bolivianos and £2,979; internal, 447,046,545 bolivianos and £785,048; floating, 2,913,244 bolivianos. Service payments on the debt were 32,105,887 bolivianos for the year ended June 30, 1941.

The boliviano was linked to the pound sterling at the rate of 140 per pound from June 1938 until May 10, 1940, when it was pegged to the dollar at 40 to 1. This "controlled" rate was changed to 46 bolivianos to the dollar on June 21, 1941. Average exchange rates of the boliviano in 1940 were: Controlled market, \$0.0256 (\$0.0309 in 1939); compensation market, \$0.0186 (Mar. 15–Dec 31); curb market, \$0.0176 (\$0.0220 for July–Dec., 1939). The note issue increased from 37,856,000 bolivianos in December, 1931, to 863,095,000 in December, 1940.

Transportation. Bolivia in 1941 had 1,402 miles of railway line in operation, about 10,200 miles of highways, and air lines connecting the principal cities with the inter-American airways network. Early in 1941 some 4,600 soldiers were detailed to help in road construction and repair. In 1940 the two air systems (Lloyd Aereo Boliviano and Pan American–Grace Airways) carried 17,275 passengers and 2,509 metric tons of freight, mail and express on 3,451 separate flights. For the progress made in developing the railway network of eastern Bolivia and the expropriation of the Lloyd Aereo Boliviano, see below under *History*.

Government. The 1938 Constitution (see *YEAR BOOK* for 1938, p. 96) vested executive power jointly in the President and his cabinet and legislative power in a Congress of two Chambers. The President is elected for four years by direct suffrage and may not succeed himself. The Senate has 27 members (3 from each department), one-third elected every two years for six-year terms. The Chamber of Deputies has 103 members elected directly for four years and renewed by halves every two years. The suffrage is restricted to male Bolivians of 20 years or over who can read and write and who are inscribed in the Civic Register. President in 1941, Gen Enrique Peñaranda del Castillo, who assumed office Apr. 15, 1940. For results of the 1940 Congressional elections, see *YEAR BOOK* for 1940, p. 79.

HISTORY

Nazi Influence Curbed. The year 1941 brought what appeared to be decisive victory to the democratic forces struggling against totalitarian influences in Bolivia. The battle between the United States and Germany for Bolivia's support had gained in intensity during 1940 (see preceding *YEAR BOOK*). In 1941 it moved rapidly toward a climax. German victories in the Balkans in April and May powerfully reinforced Nazi propaganda. The United States countered with its blacklist of individuals and firms in Bolivia aiding the Axis, and with the withdrawal of agencies for United States goods from Germans and pro-Nazis. On May 21 the government-owned Metals Reserve Company of the United States followed up its 1940 contract for the purchase of Bolivian tin by contracting to buy the entire Bolivian production of tungsten for three years at the price of \$21 per short ton. A higher Japanese bid was rejected by the Bolivian Government.

Oil Issue Reconsidered. Harassed by extreme in-

flation and other acute economic difficulties, the Peñaranda Government applied to the U.S. Export-Import Bank for a large credit to finance railway construction and other public works. It also sought to interest private United States capital in the development of Bolivian agriculture and industries. However the State Department at Washington indicated that no substantial financial aid would be forthcoming until the Bolivian Government compensated the Standard Oil Company of New Jersey for oil properties expropriated by Bolivia in 1937 (see *YEAR BOOK* for 1937).

The Peñaranda Government then sought Congressional approval for a financial settlement with Standard Oil that would not involve repudiation of the decree nationalizing the oil properties. The Senate on March 27 approved the Government's policy. In the subsequent debate in the Chamber, Deputies hostile to the United States revived old charges of tax evasion and treasonable activities during the Chaco War against Bolivian representatives of Standard Oil. A popular agitation against compensating the oil company, in part German inspired, led the Government in April to call out troops in La Paz. On April 29 criminal indictments were issued against oil company representatives to determine the truth of the charges against them.

German Air Network Seized. Without awaiting the result of this investigation, the Government proceeded with its program of United States–Bolivian collaboration. On May 15 it decreed the expropriation of the German-controlled Lloyd Aereo Boliviano, with its 3,200-mile network of air lines and an exclusive franchise for air services within Bolivia. The L.A.B. routes were turned over to Pan American–Grace Airways for operation.

Nazi Plot Foiled. Following press warnings that Nazi-Fascist elements were preparing a revolt, the Minister of Interior reported that Nazi agents were engaged in subversive activities in the provinces. On the evening of June 11 the Cabinet unexpectedly resigned to permit the President to select new aides to deal with the crisis. On June 14 the German Minister in La Paz, Ernst Wendler, asked the Bolivian Foreign Minister to define his Government's attitude with regard to President Roosevelt's warning of May 27 that the Axis planned military aggression against the Western Hemisphere. The Bolivian reply was not made public. But Bolivia's alignment with the United States was made clear on July 4 when the Government approved Uruguay's suggestion that any American nation becoming involved in the European War should not be treated as a belligerent.

The Government on July 19 frustrated a plot for a military coup designed to align Bolivia with the Axis. That night a nation-wide state of siege was proclaimed. The German Minister was declared *persona non grata* for allegedly directing the subversive activities. A round-up of German agents and pro-Nazi conspirators was begun and four newspapers, including two on the United States blacklist, were temporarily suspended. Several high-ranking officers of the Cochabamba and Santa Cruz garrisons were arrested. A revolt of 4,000 Indians in the Department of Cochabamba, apparently instigated by pro-Nazi elements as a mass protest against the Government's action, was quickly suppressed.

On July 24 the President ordered the discharge and dismissal of Major Elias Belmonte, Bolivian military attaché in Berlin, on a charge of treason. Simultaneously the Government made public a letter, dated Berlin, June 9, from Major Belmonte to the German Minister in La Paz, which ended:

My friends in the Wilhelmstrasse informed me that from your reports the situation is ripe for revolt. I think, however, July is the most favorable for action. I will fly to Brazil upon your advice and take Cochabamba and Santa Cruz, where I have good friends. I expect, however, your last advice to fly to Bolivia ready to commence our work, first in Bolivia and then in every Latin-American country now under Yankee influence.

This letter, the Government stated, was intercepted and submitted to it by the "intelligence service of a power fighting against Germany." The letter was branded a forgery by Major Belmonte and the German Government. When the Bolivian Congress convened August 6, the Government submitted documentary and other evidence of the Nazi plot in secret sessions. As a result the Senate on August 16 voted unanimous support of the Government's policy in expelling the German Minister. The Chamber of Deputies on August 12 appointed a committee of eight to conduct an investigation of the Government's charges. Votes on related issues taken during September showed about 65 per cent of the Deputies in favor of the Government's foreign policy.

The Cabinet was reorganized on October 1, the most important change being the appointment of a civilian as Minister of Interior for the first time since the 1936 coup d'état. The new Minister immediately announced the termination of the state of siege declared July 19. Congress had rejected a Government request for its extension.

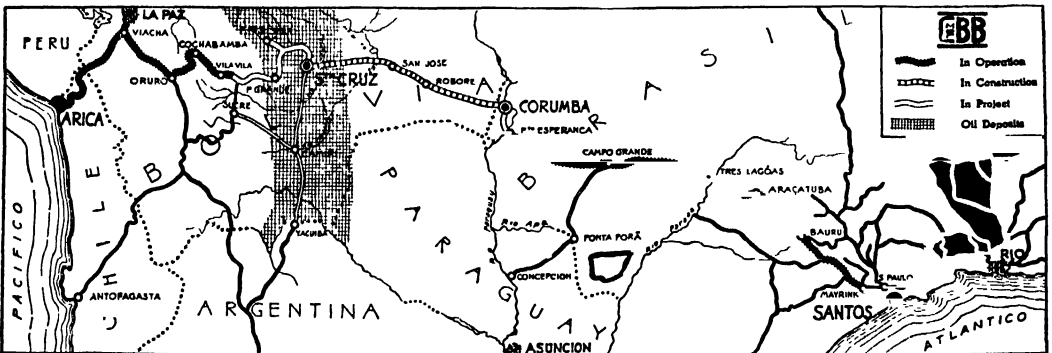
Friction with Reich. Germany retaliated against the ousting of its Minister in La Paz and the arrest of several German consular and other agents by detaining the Bolivian chargé d'affaires in Berlin and arresting a number of Bolivians in German-occupied countries. This aroused much resentment in Bolivia. There were threats of retaliatory action against some 5,000 German residents and their properties. The United States and Bolivia's neighbor republics gave prompt assurances of their firm support in the event of complications with Germany over the incident. Berlin then dropped the issue by releasing the Bolivians held in Europe.

Closer U.S.-Bolivian Ties. These developments helped to speed Bolivian-United States collaboration. The Bolivian Government on September 4 engaged a U.S. military aviation mission for three years. It reached La Paz November 26. The contract of the Italian military mission was cancelled, effective December 31. On August 1 the State Department at Washington undertook to send economic experts to Bolivia to assist in framing a comprehensive program for the development of highways, agriculture, and mining. This economic mission, headed by Merwin L. Bohan, began its duties in La Paz on December 17.

Meanwhile on December 6 the United States signed a lease-lend agreement with Bolivia under which the La Paz Government obtained funds for highway construction and for the development of agriculture, mining, and livestock raising. The amount was not made public, but was unofficially reported at from \$10,000,000 to \$15,000,000. This disappointed many Bolivians who hoped that the United States would finance the construction of the long-desired Cochabamba-Santa Cruz railway, the cost of which was placed at \$33,000,000 to \$40,000,000. Earlier in 1941 U.S. Army engineers completed a survey of the railway project and reported that a modern highway roughly paralleling the route could be constructed for \$8,000,000. It was indicated that this alternative would be adopted.

On December 8, the day after Japan attacked the United States, the Bolivian Foreign Minister condemned the Japanese aggression and gave Washington assurances that Bolivia would fulfill its obligations of continental solidarity. On December 10 President Peñaranda issued a decree signed by the entire Cabinet declaring Bolivian solidarity with the United States and with all American countries at war with Japan. The decree stated that Bolivia would not consider as belligerent any American country at war in defense of its rights. It froze Japanese credits in Bolivia and placed Axis nationals under strict supervision. On December 11 German and Italian funds in Bolivia were frozen.

Other Foreign Relations. Bolivia made additional political, economic and cultural accords with the neighboring republics during 1941. The provisional Argentine-Bolivian agreement of Apr. 2, 1940 (see YEAR BOOK for 1940, p. 80) was confirmed in a final accord signed Feb. 10, 1941. In it Argentina undertook to lend Bolivia funds for construction of the first 65 miles (Yacuba to Villa Montes) of the projected railway line from the Argentine frontier to Santa Cruz. The Argentine Government also agreed to lend Bolivia not more than 2,000,000 pesos for the exploitation of new wells in the Sandrita oil zone, and to construct an oil pipeline from the Bolivian wells at Bermejo to Oran or some other point on the North Central Argentine Railway. Two other Argentine-Bolivian agreements signed the same date facilitated mutual tourist travel and fixed their common boundary along part of the Pilcomayo River. An Argentine-Bolivian-Paraguayan accord covered joint utilization of the Pilcomayo. Five Bolivian-Uruguayan agreements on closer economic and cultural collaboration were signed February 7 as an immediate result of the



Courtesy of Bolivia Magazine



U S. Bureau of Reclamation

PIPE-LAYING AT THE SALT LAKE AQUEDUCT, UTAH

A SECTION OF THE 70-MILE ALL-AMERICAN CANAL IN IMPERIAL VALLEY, CALIFORNIA

(See AQUEDUCTS)



A fine spray of water applied with carrier tanks and pressure sprays
This accelerates the burning of the bomb and prevents the fire from spreading



A sandbag carried before the face and dropped entire on the bomb.
The heat will burn through the burlap, releasing the sand which will then run onto and around the bomb



OEM Photos by Palmer

A stirrup pump operated by three or, in emergency, two men:
One pumps water from a bucket, another holds the nozzle, while a third replenishes the water supply.

METHODS OF DEALING WITH INCENDIARY BOMBS

Regional Conference of the Rio de la Plata (q.v.) at Montevideo.

Economic ties with Brazil were tightened with the opening at the end of July of the first section of the Corumbá-Santa Cruz Railway, constructed with Brazilian funds under the convention of Feb. 25, 1938. Construction of other sections of the line progressed. On Jan. 3, 1941, the Bolivian-Brazilian Mixed Commission provided for in the 1938 convention commenced its study of the industrial possibilities of petroleum deposits in the eastern foothills of the Bolivian Andes between the Parapetí and Grande rivers.

The Chilean Foreign Minister visited La Paz during January and on January 16 signed a Bolivian-Chilean nonaggression pact. Other accords concluded at the same time called for establishment of a mixed commission to draw up a new economic convention, and for the exchange of students and professors with each government providing 10 scholarships annually.

Economic Developments. Higher prices and expanded markets for Bolivia's mineral exports in 1941 encouraged the Government to make a new effort to stabilize the currency and check rampant inflation. A decree of June 21 established a single exchange rate of 46 bolivianos to the U.S. dollar (185.15 to the pound sterling), as against the rate of 120 bolivianos to the pound fixed Sept. 8, 1939, and the preceding rate of 80 to the pound. The Central Bank and commercial banks were subsequently required to revalue their gold and foreign exchange holdings at the official exchange rate. The "profit" of 183,583,000 bolivianos accruing to the Central Bank was used in part to redeem two short-term foreign loans (119,501,000 bolivianos) and 25,486,000 bolivianos of internal loans, and in part for exchange stabilization (38,000,000) and for administrative expenses.

The rapid rise in the cost of living continued, creating further political difficulties. The prices of domestic wheat, cotton and barley were raised 40 to 45 per cent in June to keep farm prices in line with other costs. Further price fixing and control regulations were issued July 24. A decree of August 22 authorized salary increases for industrial and commercial employees ranging 5 to 30 per cent higher than those in effect July 1, 1940. To prevent further dislocation of the economic system, all exports except those especially authorized by the Minister of Finance were banned on August 19.

A bill to increase wages of all public and private employees 20 to 40 per cent was held up in the Senate in October after passing the Chamber. When railway workers threatened a nation-wide strike to force passage of the measure, the Government on October 17 called them to the colors and ordered the army to operate the lines if necessary. Declaring this measure unconstitutional, street-car, bus and printing trades workers in La Paz struck to enforce the wage demands. The walkout was ended October 26 when the Government agreed to a 20 per cent wage increase for those groups on strike. The sympathy strikes were ended soon afterward. On October 31 the Chamber approved the Government's handling of the strike, 55 to 22. The next day a new Cabinet was sworn in which included the first civilian Minister of Interior since 1936.

The Bolivian oil monopoly was declared in February to require a loan of at least 30,000,000 bolivianos to place it on a stable financial basis. On March 31 it was authorized to borrow 25,000,000. However the board of directors resigned because of criticism of the gasoline shortage and higher

gasoline prices in the plateau region. A new board was appointed by the Government.

See ARGENTINA, BRAZIL, and CHILE under *History*, CUSTOMS, BUREAU OF; LEND-LEASE ADMINISTRATION; PAN AMERICANISM; PAN AMERICAN UNION; REGIONAL CONFERENCE OF THE RIO DE LA PLATA; TELEPHONY.

BOMBARDMENT. Compare AIR RAIDS. For **BOMBARDMENT INSURANCE**, see INSURANCE.

BOMBS. There are three types: high explosive, incendiary, and gas bombs.

High explosives are projected from a gun by a propellant of cellulose tri-nitrate (nitrocellulose). Cordite, used extensively by the English, contains a mixture of nitrocellulose and nitroglycerine. In the shell itself there are three compartments. In the nose of the shell is a readily explosive material, a detonator, such as mercury fulminate, lead azid or, lately, pentaerythritol tetranitrate. This use of mercury in detonators places it on the strategic list. The preparation of pentaerythritol tetranitrate requires formaldehyde; in fact, the chief chemical bottleneck this year came from a lack of high pressure equipment for preparing formaldehyde and ammonia for these explosives. The detonator is carefully protected against accidental explosion: there is a pin to be pulled out before the shell is fired, and some shells have a slug which is swung to one side by the centrifugal force of the shell as it twists its way out of the gun. Next, in the shell, is a booster usually trinitro-methyl nitramine (tetryl). Any timing device such as a slow-burning fuse, is located here. The remainder, and bulk of the shell contains a high explosive (H.E.) charge, commonly picric acid, TNT (tri-nitro-toluene), or a mixture of one of these with ammonium nitrate. A 50:50 or 20:80 mixture of TNT: ammonium nitrate called amitol is widely used since it is much cheaper than TNT alone. The high explosive bombs are of two sorts. (1) *Fragmentation shells*, weighing about 30 lb. each and containing 4.5 lb. of TNT shatter into more than a thousand pieces the instant they strike the ground. (2) *Demolition and armor piercing bombs*, weighing 100 to 4,000 lb., are equipped with a time fuse so that they explode about $\frac{1}{40,000}$ th of a second after they hit the ground, giving time to penetrate before exploding.

Incendiaries have been used to dislodge the enemy since ancient times. The Assyrians were acquainted with liquid fire. Greek fire, probably a mixture of petroleum and quicklime, kept the invader from Constantinople for a thousand years, and thereby preserved Greek culture. The high explosives invented at the end of the past century were so superior, that the use of liquid fire ceased, but today the airplane has brought back incendiaries as a major weapon. The following chemicals are used in incendiary bombs.

(1) **Oil bombs**, often containing *sodium*. These are large 250 lb. bombs for shipyards and docks. The oil is often mixed with aluminum stearate soap, to form a jelly, called solid oil. The sodium reacts with water to evolve hydrogen, and the whole catches fire spontaneously.

(2) **Phosphorus**. These may contain solidified phosphorus or white phosphorus dissolved in a solvent and confined between sheets of pyroxylin (cellulose nitrate); the phosphorus ignites upon contact with the air. Phosphorus bombs were reported to be successful in setting fire to the paper-straw houses in Chungking; but since the flame is relatively cool, it does not normally ignite wood. However, ten thousand such "visiting cards" scattered from a

CHEMICAL WARFARE GASES

Physiological Classification	Chemical Warfare Service Symbol	Common or Chemical Name and Formula	Odor in Air	Physical Properties
Lacrymators (Tear gas)	CN	Chloracetophenone $C_6H_5-CO-CH_2Cl$	ripe fruit or floor polish	non-persistent solid
	CNS	CN+PS+ Chloroform	fly paper; sweetish	moderately persistent liquid
	CA	Brombenzyl cyanide $C_6H_5-CH-BrCN$	sour fruit	persistent liquid
Sternutators (Sneeze gases) . . .	DA	Diphenyl chlorarsine $(C_6H_5)_2AsCl$	shoe polish	non-persistent solid
	DM	Adamate; diphenyl- amine chlorarsine	odorless	ditto
	CDA	Diphenyl cyanarsine $(C_6H_5)_2AsCN$	bitter almonds	ditto
Lung Irritants (Choking gases)	Cl	Chlorine, Cl_2	pungent	non-persistent gas
	CG	Phosgene; $COCl_2$	musty-hay	ditto
	PS	Chloroacetin, CCl_2NO_2	sweetish, fly paper	moderately persistent liquid
Vesicants (Blister gases)	HS	Mustard $(C_2H_4Cl)_2S$	garlic; horse-radish	persistent liquid
	M-1	Lewisite $CHCl=CH AsCl_2$	geraniums	ditto
	ED	Ethylchlorarsine	fruit; biting	moderately persistent liquid
Other gases.		Hydrogen sulfide, H_2S Arsine, AsH_3	rotten eggs odorless	non-persistent gas ditto

single airplane over wheat fields and forests could start many fires.

(3) *Thermit*, used chiefly in 1917-18. The thermit bomb is a steel shell filled with black iron hammer scale, from the ingots hammered in the forges, and granulated aluminum. The reaction $3Fe_3O_4 + 8Al \rightarrow 9Fe + 4Al_2O_3$ is highly exothermic; the temperature rises to 3,000° C., at which temperature the molten iron melts through brick and cement. Since the mixture furnishes its own oxygen, it cannot be extinguished by smothering. In fact the entire bomb burns in about one minute, so it is handled like an ordinary fire.

(4) *Magnesium, with a thermit core*. The shell is of Dowmetal (German, *electron*) containing 86 per cent Mg, 13 per cent Al, and the remainder Cu. A detonator ignites black powder; this ignites the thermit core, which in turn ignites the Dowmetal shell. Since magnesium catches fire at its melting point, 651° C., and since the temperature of the burning alloy is 1,300°, the ordinary 2.2 lb. (1 kilogram) bomb melts to a pool of alloy within two minutes. Some of the molten magnesium also vaporizes (B P. 1,100° C) and burns as a gas. These magnesium bombs were used in the devastating raids on London in December, 1940. The Italians used them effectively in 1936 against Ethiopia, throwing them like hand grenades. Russia used them in Finland, mounting them in a rack of 36 bombs, which were scattered upon landing. They were dubbed "Molotov breadbaskets."

Unlike thermit, magnesium burns with oxygen in the air. But it reacts so vigorously with water, $Mg + H_2O \rightarrow MgO + H_2$, liberating hydrogen which in turn explodes, that a stream of water cannot safely be directed against it. It also reacts with CO_2 and N_2 , so that it cannot be "smothered" with a snuffer. The snuffers are used, in England, to hide the light from the burning bomb. Wet sand, asbestos, talc, and other materials containing water physically or chemically bound are similarly dangerous. Dry sand is useful in confining the burning, but does not extinguish the bomb. G-1, a graphite-hydrocarbon mixture marketed by Dow-Pyrene this spring is the only truly effective extinguisher for these bombs; it is sold in kegs of 40 and 250 lb. for factories working with magnesium, sodium, and similarly dangerous materials. Common household protection against a magnesium bomb is to direct a

fine spray, not a stream, of water against the burning pool of magnesium; by this device the bomb is made to burn more fiercely, and is consumed in two minutes; undisturbed it would continue to burn for fifteen minutes. Stirrup pumps, used extensively in England, require three operators: one to refill the bucket from which the pump draws its water, another to work the pump, and a third to creep up to the burning metal and spray it. It is dangerous to approach the bomb during the first minute and a half after it ignites, since the Germans put an explosive charge in some of their magnesium bombs. See FIRE PROTECTION

Gas bombs contain one or more dangerous gases. Some of the more commonly used gases and their characteristics are tabulated above. *The common civilian gas mask gives complete and total protection against all of these poisonous gases, with the exception of the vesicants.*

HUBERT N ALYEA.

BONAIRE ISLAND. See CURAÇAO.

BOND PRICES. See FINANCIAL REVIEW.

BONNEVILLE POWER ADMINISTRATION. See POWER, DIVISION OF.

BONUS, Cost-of-Living. See LABOR CONDITIONS under *Wages*.

BOOKS. See LITERATURE, ENGLISH AND AMERICAN, the articles on foreign literatures, as FRENCH LITERATURE; the bibliographies under the various topics; LIBRARY PROGRESS. For **MICROFILMING OF BOOKS**, see PHOTOGRAPHY under *Applied and Scientific*.

BOOTLEGGING. See LIQUOR PRODUCTION

BORDER PATROL. See IMMIGRATION.

BORNEO. See BRITISH MALAYA; NETHERLANDS INDIES under *Area and Population*.

BOSTON. See AQUEDUCTS; PORTS AND HARBORS; RAPID TRANSIT; WATER WORKS. For **BOSTON TRANSCRIPT**, see NEWSPAPERS AND MAGAZINES.

BOTANY. Polyploidy in Plants. There are various methods for inducing polyploidy—heat, X-rays, colchicine, and other substances. Blakeslee (*Amer. Nat.*) has described the effect of induced polyploidy in plants. In his work, colchicine was the principal reagent employed. The polyploid plants showed increase in the size of the flower, increase in the size of the pollen grains, changes in the shape of the

CHEMICAL WARFARE GASES CONTINUED

<i>Physical Effect</i>	<i>First Aid Treatment</i>
eye and skin irritation	Casualty at once Wash with 10% sodium bicarbonate in alcohol, wash eyes with boric acid.
violent eye irritation	ditto
like CNS	ditto
Headache, vomiting, sneezing	Casualty in 10 minutes Sniff Cl from bleaching powder bottle
ditto	ditto
ditto	ditto
burns upper respiratory tract	Casualty at once Keep quiet and warm, no artificial respiration, sniff ethyl alcohol
burns lower respiratory tract vomiting, tears	Casualty may be delayed Keep very quiet and warm Give heart stimulants, or oxygen. Casualty 1-4 hours Keep quiet and warm Give light stimulants.
blisters after 12 hours	Wash immediately with warm water, soap, antigas ointment or bleach cream
blisters like HS, but immediately	Casualty in 1 hour Keep warm and quiet Wash immediately with warm water or soap
burns respiratory tract	Casualty in half hour Treat as M-1 Remove to hospital
headache, loss of consciousness ditto	Casualty after several hours Keep very still Give warm sweetened tea Get medical care. ditto

capsule of *Datura*, and in the forms of the fruits of various Cucurbits. One of the most striking effects is changing sterile hybrids into fertile ones. Emsweller and Ruttle (*Amer. Nat.*) have discussed the value of induced polyploidy in floriculture. Two principal advantages are great increase in the size of flowers and increased fertility, resulting in abundant seed production. Many distinct types of new varieties of ornamental plants have originated in this way. Clausen (*Amer. Nat.*) has reviewed the occurrence of polyploidy in the genus *Nicotiana*, pointing out its value in connection with the tobacco crop. Newcomer (*Jour. Hered.*) induced tetraploids in *Cosmos*, studying the various types of new plants which originated. Naphthalene-acetic acid was effective in producing polyploids in the bean (Derman, *Jour. Hered.*). Irradiation with doses of X-rays induced many types of mutations in field beans (Genter and Brown, *Jour. Hered.*). The application of sulfanilamide to the bean and the onion resulted in the production of polyploid cells, as well as various types of nuclear changes (Traub, *Jour. Hered.*).

Genetics. A study of earliness of flowering in the sweet pea was made by Little and Kanto (*Jour. Hered.*). The early flowering type suddenly appeared several decades ago and made possible new varieties of this plant of horticultural value. These authors found that the lateness of flowering of the original type was dominant to earliness of flowering. Bamford (*Jour. Hered.*) has reported on the complex chromosome number of *Gladiolus* and pointed out the relation of the chromosomes to the successful hybridization of different types. Several species of *Gladiolus* are involved in the origin of horticultural varieties. A detailed analysis of the inheritance of seed-coat colors in the common bean (*Phaseolus vulgaris*) was made by Prakken (*Genetica*).

Prakken found that seven different factors were involved in the production of the various types of seed-coat color. Singleton (*Amer. Nat.*) relates the history of hybrid vigor and its utilization in sweet-corn breeding. Various factors are evidently involved in bringing about the increased yield when distinct strains are crossed. However, no final explanation of the cause of hybrid vigor has been found. Hatcher (*Ann. Bot.*) studied the effect of the removal of flowers on the manifestation of hybrid vigor in tomatoes, and concluded that some specific

effect of hybridity leads to the greater vigor of growth in the hybrids.

The inheritance of disease resistance has been further investigated. Reed (*Amer. Jour. Bot.*) has reported results in the inheritance of resistance to smut in oat hybrids. In some of the hybrids a single factor for resistance was found, while in other crosses two, or even three, distinct factors were involved. The factors for resistance to different physiologic races of the parasite were inherited independently. Stanford and Briggs (*Jour. Agr. Res.*) have made further studies on the resistance to powdery mildew in barley crosses. They record the occurrence of two additional factors, a total of seven now being recognized for mildew resistance in various varieties of barley. Zaumeyer and Harter (*Jour. Agr. Res.*) have investigated the inheritance of resistance to six physiologic races of rust in bean hybrids. In some of the races resistance seems to be due to a single factor. In some of the hybrids resistance appears to be dominant and in others, incompletely so.

Mycology and Plant Pathology. In recent years sexuality in the higher fungi has attracted the attention of a large number of investigators. The diploid condition arises at various points in the life history of the different fungi. Nuclear fusion may follow soon after cell fusion, or be delayed for a long period in development. Buller (*Bot. Rev.*) has reviewed very fully the literature on the diploid cell and diploidization process in plants and animals, with special reference to the higher fungi. The value of the fungi for genetic analysis has been emphasized by Lindegren (*Iowa State Col. Jour. Sci.*). Many of the fungi can be grown in culture and mature progeny obtained in two to three weeks. The cultures may be kept for many months and studied in every stage of development. They can be replanted and grown under different environmental conditions. Further, in the fungi it is usually the haploid generation that is studied, and genetic data may be obtained in which there is no obscuring effect of dominance and recessiveness such as may be found in the diploid generation. The extensive data obtained by a large number of workers is an indication of the value of this type of material for genetic experiments. Keitt and Langford (*Amer. Jour. Bot.*) have investigated the causal organism of apple scab (*Venturia inaequalis*) from the point

of view of genetics. They have studied the cultural characteristics of different strains and isolated cultures from the perfect stage and followed out, in part, the genetic behavior. The authors emphasize that many investigators of genetic problems relating to plant disease resistance have placed the major emphasis on the host. However, the parasite and host are of coordinate importance in determining the disease reaction. Kunkel (*Amer. Jour. Bot.*) has found that the yellows disease of periwinkle plants, due to a virus, could be cured by treatment at 38° to 42° C. for 2 weeks. If the diseased plants were placed in a water bath, a temperature of 40 to 45° for a few hours was sufficient. The cured plants were reinoculated and cured repeatedly.

An excellent summary of the history of plant pathology has been written by E. C. Large (Henry Holt & Co.). The story of the discovery of copper compounds and their modern application, the killing of parasites with heat, and other procedures, are presented. Interesting comments are made on the background of political, economic, and social effects, as well as on the men who made the discoveries. See ENTOMOLOGY, ECONOMIC.

Taxonomy. Goodspeed has written an interesting account of his exploration in South America, *Plant Hunters in the Andes* (Farrar & Rinehart, Inc.). Several expeditions were made, the primary purpose of which was the collection of species of Nicotiana in order to trace out the history of this genus, to which the tobacco belongs. Fernald (*Contrib. Gray Herbarium, Harvard Univ.*) has continued his survey of the flora of Virginia. In his recent publication he has described his explorations, and emphasizes the great additions to a knowledge of Virginia plants due to a century of botanical work. Cutler and Anderson (*Ann. Mo. Bot. Gard.*) have reviewed the genus *Tripsacum*, describing seven species. This genus is important since some species, at least, can be hybridized with maize.

Physiology. Studies continue to be made on the role of various chemical elements in the growth of plants. Many of the maladies of plants may be traced to the absence of traces of boron, copper, and other elements. A very good summary of the effects of these deficiencies, illustrated by colored plates, has been prepared by a group of authors under the title of "Hunger Signs in Crops" (*Amer. Soc. Agron.*). Allard and Garner (*Jour. Agr. Res.*) have studied the reaction of plants to variable ratios of light and darkness. The phenomenon of photoperiodism shows increased complexity as a result of further investigation of the factors involved. Arthur and Harvill (*Contrib. Boyce Thompson Inst.*) determined the influence of low temperature and light on the flowering in *Digitalis purpurea*. A preliminary period of cold treatment brought about a rapid flowering when the plants were returned to a long day and higher temperature. Guthrie (*Contrib. Boyce Thompson Inst.*) found that the rest period of peach buds could be broken by sprays of various compounds, including a-nitronaphthalene. He also found that yeast extracts were effective in breaking the rest period of the buds of the pear. Van Overbeek, Conklin, and Blakeslee (*Amer. Jour. Bot.*) attempted to bring about parthenogenesis by the chemical stimulation of the young ovule, using a large number of chemicals on polyploid strains of *Melandrium dioicum* and *Datura stramonium*, with no specific results in the production of haploids. However, interesting data on the mechanism of the development of fruit, seed, and embryo, were secured. The same authors (*Science*) report on a preliminary study on the growth and development of very young embryos of *Datura* and discovered that

some materials in coconut milk were essential. Hitherto, no one has been successful in growing very young embryos of plants, although mature or nearly mature embryos may readily be grown in culture.

Botanical History. A short history of botany has been written by H. S. Reed (*Chronica Botanica Co.*). While the history of taxonomic botany is presented, great emphasis is placed upon other aspects, such as physiology (including photosynthesis, plant nutrition, the role of mineral elements), geography, cytology, mycology, and plant pathology.

GEORGE M. REED.

BOULDER CANYON PROJECT. See POWER, DIVISION OF. **BOUNDARY DISPUTES.** See ARGENTINA, BULGARIA, COSTA RICA, ECUADOR, FINLAND, HUNGARY, PERU, RUMANIA, THAILAND, YUGOSLAVIA, under *History*.

BOWLING. This sport continued to grow in 1941 and casual bowlers were unable to get an alley upon which to perform, despite the Federal report that there was \$729,000,000 worth of bowling equipment—in alleys, balls, etc.—at the end of the year. During the period the receipts of bowling and billiard establishments ran to \$87,450,000, mostly from bowling, and three and a half times as much as the baseball total take. Alleys all over the country were on a twenty-four hour basis, with bowlers using them every chance they got.

The forty-first American Bowling Congress, at St. Paul, Minn., ran for fifty-five days and nights and was witnessed by more than 150,000 spectators, a record. There were twenty-five single totals of better than 700, and 1,952 of better than 600. And there were outstanding achievements when William Haar of Chicago rolled 300, the ninth perfect game in A.B.C. history and William Caskey of Canton, O., rolled 299, the tenth such ever bowled in an A.B.C. event and the second in five-man competition.

Fred Ruff, of Belleville, Ill., won the singles title with 745, and was ninth in the all-events. Harry Kelly, of South Bend, Ind., won the all-events with 2,013 and team honors were taken by the Vogel Brothers five of Forest Park, Ill., with a total of 3,065 pins toppled. The doubles fell to Ray Farness and William Lee of Madison, Wis., when Farness hit 767, highest of the tournament and fifth highest in history. The doubles total was 1,346.

Mrs. Nancy Huff won the singles at the Women's International Bowling Congress at Milwaukee when the Los Angeles kegger rolled 662. The all-events went to Mrs. Sally Twyford of Aurora, Ill., with 1,799, and the doubles to Miss Mary Jane Hogan and Mrs. Jo Pittenger of Los Angeles with 1,155. The Rovick team of Chicago took five-woman honors with 2,662.

BOXING. Joe Louis once again completely dominated the fistic scene in 1941, defending the heavyweight championship, acquired in June 1937 from Jimmy Braddock, seven times, as many as Jack Dempsey and Jack Johnson defended in seven years of clutching the bauble. The great Negro, who late in the year was classified in I-A but was not called to Army duty before the end of the year, first put away Red Burman in New York in January and the next month pulverized Gus Dorazio in Philadelphia. March was devoted to letting ponderous Abe Simon go into the thirteenth round in Detroit, and April saw Louis in St. Louis finally stopping awkward Tony Musto. In May he went to Washington, D.C., where he stopped Buddy Baer, younger brother of the former champion, in seven

rounds, after Buddy had knocked Louis out of the ring in the first, and lost on a technicality. Although thoroughly unconscious on his feet, the official ruling was that Baer had lost by disqualification when his manager, Ancil Hoffman, refused to leave the ring, yelling that Louis had hit Baer after the bell to end the seventh.

In June Louis was put against stylish Billy Conn, who abdicated his light-heavyweight championship to get the lucrative bout, which drew \$451,753, and who was greatly outweighed, 174 to 199½. Conn almost had the Negro out in the twelfth, only to succumb to body blows from earlier rounds and thunderous head punches in the thirteenth. Conn's showing prompted the belief that Louis was slipping, and that the next man to face him, given adequate poundage, would whip him and end an era. The next man was Lou Nova, late in September, after the tired champion had had a deserved rest. Nova was stopped in the final second of the sixth round, and the experts recorded that Louis was better than ever. The chance that Louis might finally be beaten in this nineteenth defense of the title drew 56,549 customers to New York's Polo Grounds, and a gross gate of \$583,771, but the challenger never was in the running.

The light-heavyweight division was finally cleared and the year 1941 ended with Gus Lesnevich, a plodding, unexciting veteran from New Jersey, in command of the purple. Agreement between the warring New York State Athletic Commission and the National Boxing Association came about in May. The N.B.A. had voted Lesnevich champion when he defeated Anton Christoforidis, but New York still called the spot vacated by Conn vacant. Then Lesnevich and New York's challenger, Tami Mauriello, met in New York and Mauriello was beaten on a split decision. Then even the New York commissioners declared Lesnevich champion. Late in the year Lesnevich again trounced the youngster.

The middleweight class was thoroughly muddled through the year by weight—the habit of young men of adding to their avoirdupois as they grow older. Billy Soose, a Penn. State graduate, conquered Ken Overlin for the title, as recognized in New York, early in the year on a highly disputed decision. Meanwhile Tony Zale, a Chicagoan, had taken the N.B.A. version from Al Hostak, the Seattle puncher. Soose then was beaten in an over-the-weight match by Georgie Abrams, stable mate of Overlin, and immediately decided to abandon the throne because of weight difficulty and campaign as a light-heavyweight in the future. Overlin also reported into the heavier ranks, as did Hostak, and late in November Zale and Abrams fought in New York for the undisputed title, with Zale a stylish winner over the Virginian.

Two amazing upsets occurred in the welterweight ranks. The first came in January when Fritzie Zivic knocked out the great Henry Armstrong, once holder of three titles, to cement the title taken on points late in 1940. Zivic was considered a fine fighter and after he belabored Al Davis, and fought a thrilling draw with Lew Jenkins he was surprisingly outpointed in fifteen rounds in Newark in August by Freddie (Red) Cochrane, who had been beaten twenty-two times in other bouts. Cochrane later whipped Jenkins when that Texan was ill, and Zivic was later beaten by young Ray Robinson, a Negro boy who came flashing out of Harlem inside the year to take his place as one of the best fighters in the business. Cochrane meanwhile enlisted in the Navy. Zivic was held to a draw at the close of the year by

Young Kid McCoy, another newcomer, but had a date to meet Robinson again early in the new year, with the winner to get a shot at Cochrane.

Sammy Angott wound up the year undisputed lightweight champion when this N.B.A. champion whipped Jenkins, New York choice, a few days before Christmas. Angott won easily in one of the dullest fights on record. In the featherweight ranks, Pittsburgh Jackie Wilson was recognized in N.B.A. ranks because of two triumphs over Richie Lemos, while the New York solons called Chalky Wright purple wearer. Lou Salca was universally recognized bantamweight boss, although beaten twice in the Philippines by Kui Kong Young and Rush Dalma. Little Dado held sway in the unpopular flyweight division despite late defeats at the hands of Young, a clever Chinese. See NEGROES.

Amateur. Amateur boxing fell off in interest among the participants and among the spectators. The lack of Olympic or International competition was mainly responsible for this as well as the apparent decline of amateur sports since the start of the war, and the rise of professional sports. Sports analysts were at a loss to explain this phenomenon, which also existed during the first World War, when paid performers were much more attended than the amateurs. The University of Idaho took the National Collegiate A.A. team title, with three individual winners, and Syracuse dominated in the East with five individual winners in the Eastern Inter-Collegiate competition. The surprise of the National A.A.U. championships came when three Massachusetts boxers, two from Lowell, accounted for titles.

CASWELL ADAMS.

BRAZIL. A republic of South America, comprising 20 States, the Federal District, and one Territory. Capital, Rio de Janeiro.

Area and Population. Area, 3,285,318 square miles; population, estimated at 45,002,176 in 1940 (30,635,605 at 1920 census). Immigrants in 1940 numbered 33,285 (Portuguese, 13,123; North Americans, 4,937; Argentinians, 3,516; Germans, 1,783; Japanese, 1,471). United States citizens residing in Brazil Jan. 1, 1941, numbered 4,240. There are strong infusions of Negro and Indian blood in the northern States. Estimated populations of the chief cities: Rio de Janeiro, 1,896,998; São Paulo, 1,322,643; Recife (Pernambuco), 529,863; São Salvador (Bahia), 510,102; Porto Alegre, 368,352; Belem (Para), 309,238. Portuguese is the official and principal language, but Italian and German are widely used.

Defense. Military training is compulsory for all males from 21 to 45 years of age, the first year in the ranks and the rest in the reserve. The active army on Jan. 1, 1941, numbered 81,111 officers and men. Trained reserves totaled 290,818, including 32,500 State troops. The army and navy air arms were merged early in 1941 to form an air force of over 100 planes and 3,500 officers and men. The navy consists of 2 battleships and 3 cruisers, all laid down in 1907 but extensively refitted; 16 destroyers and torpedo boats, 3 river monitors, 4 submarines, and 6 minelayers. Brazil has the only yards in Latin America capable of building warships (at Rio de Janeiro). A United States naval mission instructs the navy. In 1938 Brazil contracted for a U.S. military mission; under a new agreement signed Jan. 17, 1941, its personnel was expanded to provide both military and military aviation instructors.

Education and Religion. About 70 per cent of the adult population are illiterate. There are approxi-

mately 2,670,000 pupils enrolled in 36,661 primary schools. In 1936 there were about 450 high schools, 383 domestic schools, 328 normal schools, 874 special schools and 248 superior schools. There is a national university in Rio de Janeiro and three private universities in Porto Alegre, Belo Horizonte and Curitiba. Roman Catholicism is the predominant religion.

Production. Agriculture, stock-raising, and manufacturing are the principal occupations. Brazil ranks first in coffee production, second in cacao, third in sugar and tobacco, and fourth in cotton. Coffee accounted for 32.1 per cent of the value of all exports in 1940 and raw cotton for 16.9 per cent (39.8 and 20.7, respectively, in 1939). Coffee production in 1940 was estimated at 20,850,000 bags (132 lb. each), of which 12,097,584 bags were shipped overseas and 2,816,063 bags were destroyed. Brazil's 1940-41 export quota under the inter-American coffee agreement was 9,300,000 bags. Yields of other leading crops were: Cotton, 2,199,000 bales in 1940-41; sugar, 1,272,405 short tons (estimated) in 1940-41.

Livestock in 1941: 41,872,874 cattle, 23,521,666 swine, 5,850,801 goats, 6,709,310 horses, 4,118,073 asses and mules. In 1940 99,993 metric tons of fresh meats and 47,908 metric tons of canned meats were exported.

Mineral production for 1940 (in metric tons) was: Pig iron, 185,300; steel ingots and castings, 141,000; rolled steel, 135,300; coal, 1,336,300; cement, 743,634, manganese, 217,342 (exports). The 1940 gold output was 140,000 oz.; diamonds, about 20,000 carats. Salt, chrome, monazite and various other minerals are produced. The forests yield rubber (exports, 11,835 metric tons in 1940); carnauba wax (exports, 8,653 metric tons in 1940), oil seeds, and hardwoods. The leading manufacturing industries are cotton weaving, sugar refining, flour milling, meat packing and the fabrication of machinery, paper, textile products, tobacco products. There were more than 60,000 industrial establishments in 1941, powered from 1,200 electric plants with a capacity of more than 1,100,000 kw.

Foreign Trade. Imports in 1940 totaled 4,966,518,000 milreis (5,615,519,000 in 1939); exports, 4,964,149,000 (4,983,632,000). Leading exports in 1940 were (in milreis): Coffee, 1,595,229,000; raw cotton, 837,955,000; fresh meats, 244,336,000; hides and skins, 221,759,000, canned meats, 220,768,000; cacao, 191,759,000; carnauba wax, 169,411,000, castor oil seed, 119,745,000. Imports, in order of value, were machinery and apparatus, wheat, iron and steel products, automobiles, coal and coke, chemicals, other vehicles, gasoline, raw iron and steel. The United States supplied 51.9 per cent of the 1940 imports (33.6 in 1939); Argentina, 10.8 (8.4); Great Britain, 9.4 (9.3). Of the exports, the United States took 42.3 per cent in 1940 (36.2 in 1939); Great Britain, 17.3 (9.6); Argentina, 7.2 (5.5).

Finance. The original budget estimates for 1941 placed receipts at 4,124,546,000 milreis (ordinary, 3,637,043,000; extraordinary, 451,503,000) and expenditures at 4,881,197,000 milreis.

Service on the foreign debt was partially resumed Apr. 1, 1940. This debt was substantially reduced during 1940 to the following totals as of Jan. 1, 1941: 334,185,845 U.S. dollars, 152,816,724 pounds sterling, 229,185,500 gold francs, 518,217,337 French paper francs, and 6,493,100 Dutch florins. The internal funded debt on Jan. 1, 1940, was 5,081,189,000 milreis; floating debt, 2,541,095,000 milreis. U.S. Export-Import Bank loans to Brazil outstanding Mar. 31, 1941, totaled \$13,545,-

000. Commitments for additional credits of \$51,392,000 were outstanding. Average exchange rates of the milreis in 1940 were (in U.S. currency): Official, \$0.06061 (\$0.05942 in 1939); free market, \$0.05053, special free market, \$0.04831; curb, \$0.04668 (\$0.04802 in 1939).

Transportation. Brazil in 1940 had 21,242 miles of railway line, 129,057 miles of highways, and domestic and foreign air services connecting most of the principal cities. New air routes were established during 1940 and 1941, while some old routes were extended. The Italian LATI system continued the weekly service from Rome to Natal, Brazil, begun in 1940. In 1941 the German-controlled Condor Syndicate opened the Terezina-Fortaleza and other new lines over relatively uninhabited regions (see *History*). The 1940 traffic statistics for all commercial air lines in Brazil were: Flights, 7,900, passengers, 70,734; mileage, 4,337,300. A total of 5,244 ships of 16,431,469 registered tons entered Brazilian ports in 1940 as against 6,782 ships of 27,993,941 tons in 1939.

Government. The Constitution of Nov. 10, 1937, provided for the reorganization of Brazil along the lines of a corporative state (see *YEAR BOOK*, 1937, p. 102). Actually President Getulio Vargas continued to rule as a personal dictator. He became provisional President Nov. 3, 1930, after leading a successful military revolt. Under the Constitution of July 16, 1934, he was elected constitutional President the following day for a four-year term. The 1937 Constitution extended his term for six years from 1938. The principal members of his cabinet in 1941 were: Foreign Affairs, Oswaldo Aranha, Interior and Justice, Francisco Campos; Navy, Adm. Aristides Guilhem; War, Gen. Enrico G. Dutra; Finance, Arthur de Souza Costa.

HISTORY

The eleventh year of the Vargas regime passed without any marked change in the President's personal dictatorship. Again no step was taken toward establishing the governmental organs provided for in the 1937 constitution. Nevertheless Vargas's rule appeared to be willingly accepted by most Brazilians. There was little evidence of anti-government political agitation, except for such minor incidents as the arrest of 30 alleged Communists in São Paulo on March 31. Meanwhile the President pressed forward with his nationalistically inspired economic and social reform program. In the international field, his Government moved into closer political, military and economic alignment with the United States.

Collaboration with United States. The spread of the European War made Brazil increasingly dependent upon the United States for defense against a possible German attack from Africa, for armaments and other manufactures not available in Brazil, for markets for Brazil's surplus products, and for capital for the development of Brazilian industries. The United States filled all of these needs, in varying degrees, and in return obtained the use of Brazilian air and naval bases and Brazilian aid short of war when the United States entered the world conflict.

The Brazilian Government's shift from the strict neutrality of preceding years was reflected in January in a curb placed on anti-United States gibes in pro-Axis press organs. The United States in February supported a Brazilian protest to Great Britain over the British seizure of the French ship *Mendoza* on January 18 off the Brazilian coast within the 300-mile inter-American safety zone. In April President Vargas's favorite daughter, Alzira, and

her husband, Commander Ernani do Amaral Peixoto, Governor of the State of Rio de Janeiro, arrived in the United States on a goodwill mission. On June 28 Foreign Minister Aranha announced Brazil's acceptance of Uruguay's proposal not to regard as a belligerent any American nation at war with a non-American nation.

Brazil went beyond Pan American obligations to support the foreign policy of the United States on July 28 when the Foreign Minister stated that his Government would approve U.S. action to prevent the Azores and other Atlantic islands of Portugal from falling into Axis hands. (The visit of an important Portuguese mission to Brazil in August was followed by reports of a Portuguese-United States-Brazilian agreement under which Portugal would place her Atlantic islands under Brazil's protection, with United States support, in the event of an Axis attack upon Portugal.) President Vargas pledged his country to a policy of firm defense of Pan American solidarity against "any aggression from whatever source" in a speech on the 119th anniversary of Brazil's independence (September 7). The tone of this speech contrasted notably with the President's address of June 11, 1940, in which he denounced the "sterile demagoguery of political democracy" and tacitly approved Axis aggressions.

Economic and Military Accords. In line with the foregoing diplomatic trend, Brazil and the United States concluded a series of significant economic and military agreements. On February 8 a Brazilian decree made the export of all strategic raw materials to non-American countries subject to government license. The United States obtained the exclusive right to purchase Brazil's surplus strategic raw materials up to specified maximum amounts for two years through notes exchanged May 14, 1941. The agreement, which went into effect June 13, applied to bauxite, beryl ore, chromite, ferro-nickel, industrial diamonds, manganese ore, mica, quartz crystals, rubber, titanium, and zirconium. These moves cut off valuable shipments of Brazilian materials going directly to the Axis powers or through Japan to Germany.

The United States reciprocated on July 9 when the Office of Production Management gave priority ratings to contracts placed in the United States for the construction of the \$45,000,000 steel mill under construction at Velta Redonda, State of Rio de Janeiro. The mill was to be partly financed by a \$20,000,000 loan granted by the Export-Import Bank in 1940 (see preceding YEAR BOOK).

Early in the year Brazil sent a military mission to the United States to seek other aid in Brazilian rearmament. In May Vice Adm. José Machado de Castro e Silva, Chief of the Naval General Staff, joined other Latin American naval chiefs in a tour of U.S. naval establishments. The Brazilian Navy Dept. announced May 21 that construction of a new naval base at Natal would begin as soon as possible, and on June 15 a Brazilian Embassy official in Washington stated that U.S. credits for the construction of air bases in eastern Brazil were under negotiation. Both the naval and air bases were provided for in an agreement signed in Washington October 1 making large U.S. lend-lease credits of unspecified amount available to Brazil. The United States was to receive Brazilian raw materials in exchange for the loan. It was understood that these bases were to be under Brazilian control but available for the use of United States forces in the event of a war emergency. The lend-lease loan followed credits totaling \$88,397,000 advanced to Brazil by the Export-Import Bank of Washington

during the period from 1938 until June 1, 1941.

Early in July Washington announced that U.S. airmen were using Brazilian airports in flying military planes from the United States to British forces in Africa. On July 26 President Vargas authorized Pan American Airways to construct or improve airfields at eight cities strategically situated along the Brazilian coast from the Amazon River to São Salvador. At the same time Pan American Airways was authorized to operate airlines from Rio de Janeiro to Asunción, Paraguay, and from Rio to Goiania via Bello Horizonte and Patos.

In a speech to army officers on November 10, President Vargas more openly espoused "frank continental solidarity" and declared that Brazil was aligned both politically and militarily with the American democracies. Carrying this policy into effect, Brazil cooperated with the United States in the military measures taken November 24 to protect Surinam (q.v.) against Axis infiltration and sabotage. Immediately afterward it strengthened its garrisons along the Atlantic coast from Surinam to below the hump of eastern Brazil.

Following the Japanese attack upon the United States, President Vargas called his Cabinet in session December 8. It unanimously declared Brazil's "solidarity with the United States, in line with . . . continental obligations." Axis funds in Brazil were frozen December 9. This meant that United States warships and aircraft were permitted to use Brazilian ports and airfields. Axis funds were frozen on December 9, and on December 13 pro-Axis newspapers and news agencies were placed under a special censorship or suspended.

Policy Toward Axis. Earlier in the year, Brazil took other steps designed to curb Axis activities and influence. A decree of January 7 suppressing all foreign-language publications in Brazil, effective in six months, affected mainly pro-Axis publishing enterprises. Forced to close, or change to the Portuguese language, were 37 publications in German, 9 in Italian, 8 in Japanese, and 5 in English. The drive against Nazi propaganda among the Germans of southern Brazil continued. In October a pro-Nazi newspaper was closed and a sports group broken up for violating the nationalization laws. The Government in May refused permission to Air France, now under German control, to resume its air services between Rio de Janeiro and Santiago, Chile, via Buenos Aires. In June the Navy contracted to buy the Air France seaplane base at Natal.

For making an unsanctioned 7-hour flight from Pernambuco on March 27, the Italian Aviation Co. (Ala Litoria) was fined \$1,000 and warned that repetition of the offense would mean expulsion of the company from Brazil. The Government refused a request by the same company for maps of the Brazilian coast and airports over which its transatlantic planes flew, and also turned down the company's petition for the stationing of a mother ship near Fernando Noronha Island on the transatlantic route. With a view to forestalling a possible Axis move, the Government on March 3 ordered Brazilian troops to occupy the barren island of Trinidad, a potentially important mid-ocean air base over 500 miles east of the city of Victoria.

Charges that the German Nazi organization in the State of Rio Grande do Sul was plotting to annex that area to the Reich were made by the State's Secretary of Education, Dr. Coelho de Souza, in Rio de Janeiro on November 12. When the United States entered the war, Brazilian forces in the German-populated districts of the southern States were strengthened. On December 30 it was an-

nounced that a number of persons were killed in a clash between Rio Grande do Sul police and organized Nazis. The clash accompanied raids in numerous towns upon headquarters of underground German organizations, many of which were found to have secreted arms.

In December, also, the Brazilian Government took over 25 Axis merchant ships in Brazilian ports, agreeing to pay compensation after the war. It also permitted North American oil companies to withhold gasoline from the German-controlled Condor air system in Brazil and the Italian transatlantic Lati line. This forced both systems to suspend operations.

Relations with Neighbors. Brazil continued its policy of developing closer political and economic relations with the adjoining republics of South America. Two important commercial conventions were signed with Argentina on April 9. In June President Vargas approved another \$1,500,000 appropriation for construction of the Corumbá-Santa Cruz railway in Bolivia that will link Santos, Brazil, with Santa Cruz and eventually with La Paz and Arica, Chile. The President entered Bolivian territory in July to inspect this joint Bolivian-Brazilian enterprise, while making an extensive tour of Brazil's interior and frontier regions.

From Corumbá, the President flew on July 31 to Asunción, Paraguay. There he signed a treaty providing for the construction at Brazil's expense of a branch railway connecting Campo Grande (on the Brazilian trunk line from Santos to Puerta Esperanza on the Upper Paraguay River) with Concepción in Paraguay (see map on p. 70). The railway treaty was one of 10 conventions for closer commercial and cultural relations drawn up during a visit of the Paraguayan Foreign Minister to Rio de Janeiro in June. The other conventions provided for a free port for Paraguayan imports and exports at Santos, the exemption of local trade between border towns from import duties, regulation and development of navigation on the Upper Paraguay River, establishment of a mixed commission to prepare a treaty of commerce and navigation, the granting of reciprocal credits by the Brazilian and Paraguayan Central Banks to foster trade, the exchange of economic and administrative experts, etc.

Beginning in mid-November, Foreign Minister Aranha made a tour of three South American capitals—Buenos Aires, Santiago, and Montevideo—for conferences believed related to the problem of continental defense. For further details, see ARGENTINA, BOLIVIA, PARAGUAY, and URUGUAY under *History*. Exchange of the first Ministers between Brazil and Canada occurred early in 1941.

Internal Legislation. Among internal measures of a nationalistic character placed in operation during 1941 was the decree-law of April 19 regulating the organization and protection of the family. It contained many new provisions encouraging marriage and large families. A decree of April 14 established a National Sports Council to encourage and control sports. Another decree of April 9 provided that only banks of deposit whose entire capital was owned by Brazilian citizens might operate in Brazil, effective July 1, 1941. This was modified in September to permit banks of deposit owned by nationals of any American country to continue in operation. The local labor courts provided for in the decree of Dec. 12, 1940, went into operation May 1, 1941. Further regulations for the encouragement of agricultural resettlement were issued Feb. 9, 1941. An autonomous Merchant Marine Commission to supervise and control all river, lake, and maritime navigation in Brazil was authorized March

7. On March 19 the Government suspended the granting of temporary visas to foreigners wishing to enter Brazil, except for citizens of American countries and others with adequate means of support.

Economic Conditions. Due largely to increased trade with the United States and other American countries, Brazil remained fairly prosperous in 1941 despite the loss of important export markets in Europe. The Government on February 15 announced that it would finance coffee surpluses for 1941, 1942 and 1943. During the year it placed in operation an experimental plant for the manufacture of plastics and various by-products from surplus coffee. It was hoped this would avert the necessity of burning the annual surplus to maintain prices.

Price rises in foodstuffs and other materials led the President on May 5 to prohibit further increases under pain of heavy jail sentences. A gasoline and fuel oil shortage led in July and August to conservation measures. The worst floods ever recorded in the State of Rio Grande do Sul inflicted great damage to crops and property. The entire business district in Porto Alegre was inundated.

See ARGENTINA, BOLIVIA, CANADA, PARAGUAY, and SPAIN under *History*; CHEMISTRY, INDUSTRIAL; COFFEE; LEND-LEASE ADMINISTRATION; MUSIC, NEWSPAPERS AND MAGAZINES; UNITED STATES under *Latin America*.

BREMEN, State of. See GERMANY under *Area and Population*.

BRETHREN, German Baptist (Dunkers or Dunkards). A religious organization founded in Schwarzenau, Germany, in 1708 by a group of Pietists and established in Germantown, Pa., in 1719 under the leadership of Peter Becker. There are four denominations of Brethren in the United States, the largest and oldest group being the Church of the Brethren, or Conservative Dunkers, with headquarters at Elgin, Ill. For statistics, see RELIGIOUS ORGANIZATIONS.

BRIDGES. Awards in 1941 for "the most beautiful steel bridges" built in 1940 included: (1) for bridges costing more than \$1,000,000, the Susquehanna River highway bridge at Havre de Grace, Md., with two 456-ft. arch spans and several deck truss spans, 7,618 ft. in all; (2) for bridges over \$250,000, the Pennsylvania Turnpike bridge over Dunning Creek, with plate girder spans of 96 and 48 ft.; (3) for bridges less than \$250,000, the suspension span of 360 ft. over Klamath River, California; (4) for movable bridges, the double-leaf bascule of 98 ft. over Navesink River, New Jersey.

Tolls on the Ohio River bridge at Ashland, Ky., having retired the \$904,000 bonds, it was made a free bridge in August. A proposed Mississippi River bridge at Memphis was deferred by the steel priority situation. Two interesting projects combine bridges with long embankments or causeways: (1) to connect Corpus Christi, Texas, with Padre Island, in the bay; (2) to complete and extend the Davis and Gandy concrete trestles and causeways in the Tampa Bay area, Florida, and to build 10 miles farther south a new 10½-mile combination of causeway, bridge, and tunnel.

In the highway system of the United States, about 2,500 bridges are reported inadequate for modern loads and traffic. Some of these were disclosed by failure under army equipment during maneuvers. Since bridge destruction in war seriously hampers advancing troops, military engineers have to provide for rapid restoration of passage, either by independent structures or utilizing the

wreckage. For such work the U.S. Engineer Corps has developed portable pontoon and girder bridges and also a portable cableway span, with trolleys for transporting heavy equipment across streams.

Steel Bridges. An event of 1941 was the opening, in November, of the new 950-ft. steel arch "Rainbow Bridge" at Niagara Falls, replacing the 840-ft. steel arch wrecked by ice in 1938. Two arch ribs carry columns supporting the deck or floor, which is level with the crown of the arch. This floor has two 21-ft. roadways, with 4-ft. separating strip, and a 10-ft. walk on the side facing the Falls. With concrete arch approaches the total length of bridge is 1,450 ft.

A steel arch of 540 ft span carries a four-lane road across the Chesapeake and Delaware Canal at St. Georges, Del., at 135 ft. above the water. It is a high-level bridge, 4,140 ft long, and takes the place of a low-level vertical-lift drawbridge which was wrecked by a ship in 1939. Next to this ranks a 264-ft. steel arch highway bridge over the Meramec River near St. Louis, Mo. The arch trusses extend beyond the piers to form two flanking spans of 192 ft. In both these bridges, the floor is level with the ends of the arches. A smaller arch bridge carries a road over the Eagle River, near Red Cliff, Colo.

The Pit River double-deck cantilever bridge, in California, to be completed in 1942, carries the double-track line of the Southern Pacific Railway on the lower deck, and a 40-ft. concrete roadway on the upper deck. As parts of the railway and road will be submerged in the reservoir behind the great Shasta Dam, it was necessary to rebuild them outside the limits of the reservoir. The main cantilever span of 630 ft. extends beyond its piers to form two anchor-arm spans of 497 ft., and at each end there are three truss spans of 282 ft., making a total length of 3,500 ft. The two main piers, 360 ft. high, will be submerged to within 25 ft from the top. Similar conditions at the Grand Coulee Dam, on the Columbia River, led the Great Northern Ry to build a bridge having a center span of 608 ft. and two side spans of 266 ft., each composed of a 114-ft. cantilever arm from the main span and a 152-ft. truss extending to the abutment.

The Kentucky River highway bridge being built at Clay's Ferry, Ky., will be the highest in the State, 240 ft. above the water. Its main feature is a truss 1,100 ft long, continuous over three spans of 320, 448, and 320 ft. The longest plate-girder span ever built is a 271-ft. span in the east viaduct approach to the Mam Ave. bridge at Cleveland, Ohio. These long girders are 12 ft. deep at the ends and 16 ft. at the middle.

In a 4-mile high-speed highway approach to the east end of the Brooklyn-Battery tunnel, at New York, is the Gowanus Viaduct, carrying two 34-ft. three-lane roadways, with a 4-ft. separating strip. Steel two-post towers or bents support girders continuous over three spans, but the towers are only 34 ft. wide at top, the 72-ft. cross girders for the deck being cantilevered out on each side. A steel viaduct on the New York, Chicago & St. Louis Railroad at Conneaut, Ohio, built in 1901, was strengthened for heavier engines and train loads by placing new riveted girders and welding additional vertical members on the columns, with additional bracing between the columns. The viaduct is 1,320 ft. long, with alternate spans of 60 and 30 ft.

Suspension Bridges. The wrecking of the 2,800-ft. span of the Tacoma Narrows bridge by a windstorm on Nov. 7, 1940, has led to extended studies of suspension bridge design in relation to aerial forces. In turn, these studies have led to the development

of two new types of suspension bridges, in both of which the cable and stiffening truss on each side of the bridge form the chords of a truss, with the suspenders as the web members.

That the Tacoma Bridge was well designed and well built, but that the influence of aerodynamic forces on so large a bridge was not realized, was the decision of the official investigation. As the bridge was exceptionally narrow and flexible, it was unstable aerodynamically at relatively low wind velocities. The floor was blown away, and the cables and steel towers were too badly damaged to be used in any reconstruction. After considering several tentative designs for a new bridge (including a cantilever bridge with 1,600-ft. main span), the decision was for a suspension bridge of the original span, 2,800 ft., but with towers 498 ft. high, instead of 443 ft., and with its heavy four-lane roadway 180 ft. above the water, instead of 198 ft. in the original bridge.

Strengthening the Ohio River suspension bridge at Steubenville, Ohio (built in 1904), to carry heavier modern loading, was accomplished in 1941 without interrupting traffic. This work included new cable anchorages, suspender cables, stiffening trusses, and floor framing, as well as reinforcement of the steel towers. Special cable anchorages were required for a 550-ft. suspension bridge in Australia, as they were in a soft clay stratum. At one end the anchorages were concrete boxes 46 x 30 ft and 18 ft. deep, buried in the clay; at the other end, the cables were anchored to the end of the steel viaduct approach and to a pier sunk in the clay. A suspension bridge over the Rio Grande River at Mercedes, Texas, was wrecked by a flood on October 27.

Movable Bridges. A bascule bridge of exceptional size and weight is the 245-ft. double-leaf structure now being built at Chicago to cross the Chicago River at State St. Its width will include two four-lane 41-ft. separated roadways and two 13-ft. sidewalks. Special foundations were required, as the State Street rapid-transit subway is directly under the bridge. Concrete piers on each side of the tunnel were sunk to rock at 110 ft. below water level, and upon these were placed massive steel trusses which span above the tunnel and carry the trunnion bearings of the movable leaves.

A cable-operated vertical-lift drawbridge of 350 ft. span, riding between towers 200 ft. high, carries the new Main Street bridge over the St. John's River at Jacksonville, Florida, giving 135 ft. clearance for navigation. The total length of bridge is 2,060 ft. A single-track vertical-lift drawbridge 245 ft. long, carrying the Kansas City Southern Railway over the Neches River at Beaumont, Texas, was opened to traffic in November. A double-deck vertical-lift span of 224 ft. carries a new bridge over the navigation channel of the Piscataqua River at Portsmouth, N.H. On its steel towers, 208 ft. high, are the cable drums, with electric motors of 100 h.p. The upper deck has a 30-ft. concrete roadway, while the lower deck carries a single-track line of the Boston & Maine Railroad. The bridge in all is 2,800 ft. long. In the highway bridge being built across Sinepuxent Bay at Ocean City, Md., the 70-ft. navigation channel is crossed by a double-leaf bascule span of the rolling-lift type, 94 ft. long. Concrete spans for the approaches give a total length of 2,295 ft. to this bridge, which is to be completed by the summer of 1942. The replacement of a low-level bridge with draw span, over the Chesapeake and Delaware Canal, by a high-level bridge which requires no such span, has been mentioned already.

The longest double-leaf bascule bridge ever built, 336 ft., crossing the canal approach to the locks at Sault Sainte Marie, Mich., met with an accident on October 7. When the two leaves or halves are lowered for railway traffic they are locked together mechanically to form a single truss span. But in some unexplained way this connection failed, so that as the locomotive of a southbound train reached the middle of the bridge the north leaf dropped, hinging on its bearings. The engine went down and two men were drowned. After the train had been removed, both leaves were raised October 8, and the canal was reopened for navigation on October 10. A little later the bridge was repaired and put in service so that railway traffic was resumed.

Concrete Bridges. Of the numerous concrete bridges built in 1941, most were for highways and many for grade separation projects, the latter including separation of intersecting highways as well as intersections of highways with railways. Architectural treatment is usually a feature of these concrete highway bridges, since attractive appearance is highly desirable in bridges which are continually in view of the traveling public. Many grade-separation bridges are of complicated design in providing connections between the highways at the upper and lower levels. A striking example (completed in 1940) is the east approach to the George Washington Bridge over the Hudson River at New York. As shown in the accompanying view, it consists of a series of concrete arch viaducts connecting with streets at different levels and in different directions.

An outstanding concrete bridge of 1941 is that carrying the Missouri Pacific Railway across the Morganza floodway, near Lottie, La. Its length of 3½ miles is composed of 600 spans of T-beam type, 31 ft. 3 in. between centers of piers, which are of open design and 27 ft high. A concrete arch bridge of 492 ft. span has been built at Berne, Switzerland, to carry a four-track railway in the reconstructed approach to the main passenger station.

Timber Bridges. Timber is used extensively for bridges and trestles of the smaller class, both highway and railway, but occasionally for larger structures. An example of the latter is a high trestle on a forest railway in Washington, having a length of 1,130 ft., with its track 235 ft. above the water. The stream is spanned by a timber arch of 120 ft. span and 60 ft. height, supporting the trestle above it. All the timbers were creosoted, and were cut and bored in advance, so as to be put together with a minimum of carpenter work. For timber highway bridges and trestles, extensive use is being made of a floor construction in which a concrete slab is bonded to or made an integral part of the solid timber deck upon which it is laid.

Foreign Bridges. A few foreign bridges have been noted above, but in Europe the war has involved the damage and destruction of innumerable bridges. This in turn has led to much ingenious work to restore communications rapidly by emergency methods. A report, contrary to rumor, is that little damage has been done to the numerous Thames River bridges at London. A combined highway and railway bridge is proposed to cross the Danube at Harsova, Rumania, about midway between the bridge at Chernavoda and Galatz, near the mouth of the river. Obviously, this must be a post-war project. War destruction of many railway bridges over large rivers in Europe suggests the temporary use of car ferries when traffic can be resumed.

See FOUNDATIONS.

E. E. RUSSELL TRATMAN.

BRIDGES CASE. See COMMUNISM; LAW under *Other Causes Célebres*; UNITED STATES.

BRITISH CAMEROONS. See CAMEROONS, BRITISH.

BRITISH COLUMBIA. A Canadian province on the Pacific coast. Area, 366,255 square miles, including 6,976 square miles of fresh water. Population (1941 census), 809,203, compared with (1931 census) 694,263. Chief cities (1941 census figures): Victoria, capital (42,907), Vancouver (271,597), New Westminster (21,602), Trail (9,132), North Vancouver (8,844), Prince Rupert (6,656), Nanaimo (6,583), Kamloops (5,847), Nelson (5,758), Vernon (5,099), Kelowna (5,047), Port Alberni (4,547). Vital statistics (1940): 13,763 living births, 8,291 deaths, 9,624 marriages. Education (1938-39): 173,981 students enrolled in schools and colleges.

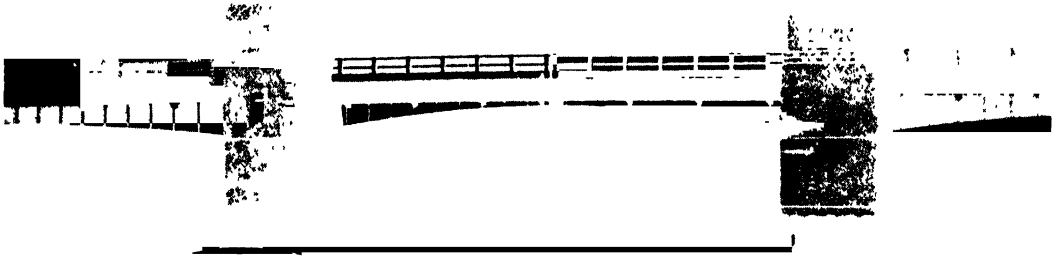
Production. The 1940 gross value of agricultural production was \$47,019,000 (field crops \$14,421,000, dairy products \$11,245,000, fruit and vegetables \$10,045,000, farm animals \$5,553,000, poultry products \$5,031,000). Wheat (1,999,000 bu.), oats (5,912,000 bu.), potatoes (122,000 tons), turnips, etc. (61,600 tons), hay (490,000 tons), fodder corn (71,000 tons), gram hay (116,000 tons) were the main field crops. Apple crop (1940): 1,790,000 hbl. worth \$4,296,000. Livestock (1940): 327,200 cattle, 174,000 sheep, 85,100 swine, 4,819,600 poultry. Fur output (1938-39): 251,258 pelts valued at \$1,116,968. Value of forestry products (1939): \$56,140,000. Fisheries catch (1940): 295,345 tons worth (as marketed) \$21,710,000 (salmon \$13,757,100, herring \$4,426,400, halibut \$1,571,000, pilchards \$632,400). In 1941 approximately 2,245,700 cases of salmon were packed. Mineral output (1940) was valued at \$75,352,750 (gold, 617,011 fine oz. valued at \$23,250,019, coal, 1,620,894 tons). Manufacturing (1939). 1,710 factories, 42,554 employees, \$103,263,293 net value of products.

Government. Finance (year ended Mar. 31, 1940): \$36,417,312 for revenue and \$33,037,276 for expenditure, net funded debt, \$150,991,508. The executive power is vested in a lieutenant governor who is advised by a ministry of the legislative assembly, the latter consisting of 48 members elected for a five-year term by adult suffrage (21 Liberals, 14 Cooperative Commonwealth Federationists, 12 Conservatives, and 1 Laborite were elected at the provincial general election of Oct. 21, 1941). Six senators (appointed for life) and 16 elected commoners represent British Columbia in the Federal parliament at Ottawa. Lieutenant Governor, W. C. Woodward; Premier, John Hart (Liberal) who succeeded T. D. Pattullo as leader of the Liberal party on Dec. 2, 1941.

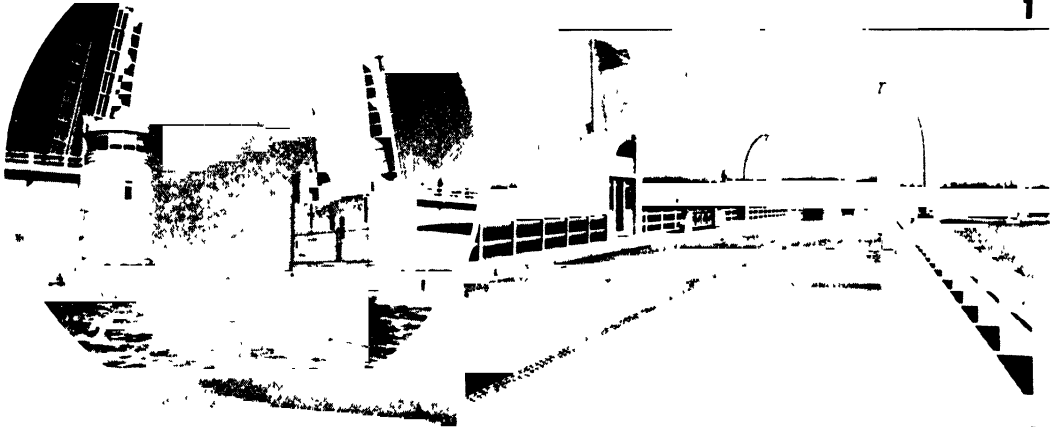
History. Premier John Hart announced on Dec. 10, 1941, that a coalition government of Liberals and Conservatives had been formed. The cabinet consisting of 5 Liberals and 3 Conservatives was sworn in the same day. In the absence of the Premier from the capital, R. L. Maitland, the Conservative leader, would be acting Premier. Harold Winch, the leader of the Cooperative Commonwealth Federation, stated on Dec. 5, 1941, that his party would not join a coalition. See CANADA.

BRITISH EAST AFRICA. See KENYA, NYASALAND, TANGANYIKA TERRITORY, UGANDA, ZANZIBAR.

BRITISH EMPIRE. The world's largest empire, comprising an area of 13,353,952 square miles and a population of about 500,775,000. It consists of:



1



3



4

A NEW BRIDGE—A NEW APPROACH

(1) Navesink River Bridge in New Jersey, popularly called the Oceanic Bridge, prize winner for the "most beautiful" movable bridge. The bridge is shown (2) with double leaves open and (3) closed (4) The east approach to the George Washington Bridge, New York City, a striking example of complicated design in providing connections between the highways at the upper and lower levels

See *BRIDGES, ROADS AND STREETS*



U.S. Bureau of Reclamation

CONSTRUCTION ON SHASTA DAM

The U.S. Bureau of Reclamation is building the second largest dam in the world across the Sacramento River in California. Begun in 1940, the Shasta Dam will provide flood protection, irrigation, navigation, power, and other benefits. See DAMS

- 1 River tunnel and spillway section
- 2 Cableway head tower, 460 feet high
- 3 An air view from above the tower
- 4 Close-up of concrete construction

1. The United Kingdom of Great Britain and northern Ireland. See GREAT BRITAIN; IRELAND, NORTHERN.

2. Self-governing Dominions—AUSTRALIA, CANADA, NEWFOUNDLAND (temporarily administered by a Governor in Commission, responsible to the Crown through the British Secretary for Dominion Affairs), NEW ZEALAND, UNION OF SOUTH AFRICA.

3. EIRE, (IRELAND), a sovereign, independent state, associated for certain purposes with the United Kingdom and the self-governing dominions, which are sometimes referred to collectively as the British Commonwealth of Nations.

4. INDIA and BURMA.

5. Self-governing colonies—CEYLON and SOUTHERN RHODESIA.

6. Crown colonies and protectorates—ADEN, BAHAMAS, BARBADOS, BASUTOLAND, BECHUANALAND, BERMUDA, BRITISH GUIANA, BRITISH HONDURAS, BRITISH SOLOMON ISLANDS, BRITISH SOMALILAND, CYPRUS, DOMINICA, FALKLAND ISLANDS, FIJI, GAMBIA, GILBERT AND ELLICE ISLANDS, GIBRALTAR, GOLD COAST, GRENADA, HONG KONG, JAMAICA, KENYA, LEEWARD ISLANDS, MALTA, MAURITIUS, NIGERIA, NORTHERN RHODESIA, NYASALAND, ST. HELENA, ST. LUCIA, ST. VINCENT, SEYCHELLES, SIERRA LEONE, STRAITS SETTLEMENTS, SWAZILAND, TRINIDAD AND TOBAGO, UGANDA, ZANZIBAR.

7. Protectorates of a special nature—BRITISH NORTH BORNEO, BRUNEI, FEDERATED MALAY STATES, SARAWAK, UNFEDERATED MALAY STATES.

8. Mandates held by the United Kingdom—BRITISH CAMEROONS, PALESTINE, TANGANYIKA TERRITORY, TRANS-JORDAN, TOGOLAND (British sphere).

9. Mandates held by Dominions—NAURU (Australia), NEW GUINEA (Australia), SOUTH-WEST AFRICA (Union of South Africa), WESTERN SAMOA (New Zealand)

10. Dependencies of Dominions—LABRADOR (Newfoundland); ASHMORE AND CARTIER ISLANDS, PAPUA, NORFOLK ISLAND, AUSTRALIAN ANTARCTIC TERRITORY (Australia), UNION ISLANDS OF TOKELAU and ROSS DEPENDENCY (New Zealand).

11. Territories held under condominium—ANGLO-EGYPTIAN SUDAN (United Kingdom and Egypt), NEW HEBRIDES (United Kingdom and France), CANTON and ENDERBURY ISLANDS (United Kingdom and United States).

See the separate articles covering most of the above territories except those included in the accompanying table. New Guinea, Papua, Nauru and Norfolk Island are dealt with under AUSTRALIA; British North Borneo, Brunei, Federated Malay States, Sarawak, Straits Settlements and Unfederated Malay States under BRITISH MALAYA, Union Islands under NEW ZEALAND; and Dominica, Grenada, St. Lucia, and St. Vincent under WINDWARD ISLANDS.

Country (Capital)	Sq. mi.	Population	Location
Basutoland (Maseru)	11,716	562,311 ^a	S. Africa
Bechuanaland (Mafeking ^b)	275,000	265,756 ^a	S. Africa
Gilbert & Ellice Is. (Ocean Is.)	216	35,000 ^c	Oceania
Mauritius ^d (Port Louis)	807	415,492 ^c	Indian Oc.
St. Helena ^e (Jamestown)	81	4,633 ^c	S. Atlantic
Seychelles (Victoria)	156	31,486 ^c	Indian Oc.
Solomon Islands (Tulagi)	11,458	94,066 ^c	Oceania
Swaziland (Mbabane)	6,704	156,715 ^c	S. Africa
Tonga ^f (Nukualofa)	385	33,785 ^c	Oceania

^a 1936 census. The total for Basutoland is exclusive of 101,273 absentee natives working in the Union of South Africa at the time of the census. ^b In Cape Province. ^c 1938 estimate. ^d Includes dependent islands (87 sq. mi.; pop., 11,744). ^e Includes the dependent island of Ascension (34 sq. mi., pop., 159); the islands of Tristan da Cunha, Gough, Nightingale, and inaccessible became dependencies of St. Helena on Jan. 12, 1938 / 1938 census. ^f Also known as Friendly Islands.

BRITISH GUIANA. A British colony in northern South America. Area, 89,480 square miles; population (1939 estimate), 341,237, of whom 144,350 were East Indian immigrants. Vital statistics (1939): 9,599 births and 6,728 deaths. Capital, Georgetown, 68,818 inhabitants.

Production and Trade. The area under cultivation in 1939 totaled 172,410 acres, the principal crops being sugar (189,245 tons), rice (40,388 tons), coconuts, coffee, cacao, rubber, citrus fruits, plantains, fibers, and maize. Extending over an area of 78,000 sq. miles, the forests produce such timbers as the greenheart, mora, wallaba, morabukea, kakeralli, and purple heart. Minerals (with 1939 export figures): diamonds (33,351 carats), gold (38,473 oz.), bauxite (the ore of aluminum, 476,013 tons). Livestock (1939): 133,351 cattle, 31,895 sheep, 27,248 swine, 11,346 goats, 7,628 donkeys, and 2,808 horses. Trade (1940) \$14,337,242 (\$10,724,671 in 1939) for imports, owing to the need for keeping certain mineral exports secret, export figures for 1940 are not available (exports were valued at \$14,505,552 in 1939). Chief imports—flour, cotton goods, clothing, and sulphate of iron. Sugar (\$8,134,239), bauxite (\$2,889,368), and gold (\$1,060,616) were the main exports in 1939. Shipping (1939): 3,317 ships totaling 1,901,636 tons entered and cleared.

Communications. In 1940 there were 79 miles of railway, 450 miles of river navigation, 39 miles of canals, 571 miles of roads suitable for motor transport, and 514 miles of trails. Georgetown was a port of call in Pan American Airways' weekly service from Miami, Fla., to Paramaribo, Cayenne, and Para.

Government. Finance (1941 estimates). \$6,670,000 for revenue and \$7,101,000 for expenditure. In 1940 revenue exceeded expenditure by \$200,000. The funded public debt on Dec. 31, 1939, was £4,438,430. The British Guiana (Constitution) Orders in Council of 1938 and 1935 provide for the government of the colony, and for a legislative council of 30 members (the governor as president, 2 ex-officio, 8 nominated official, 5 nominated unofficial, and 14 elected) which is to be dissolved every five years, unless previously dissolved, and a general election held. A governor, aided by an executive council, heads the executive and administrative branch of the government. Governor, Sir Gordon Lethem (succeeded Sir Wilfrid Jackson, August, 1941).

History. The arrangements made in 1940 for the establishment of United States reconnaissance air bases in British Guiana (see YEAR BOOK for 1940, p. 89) were formalized in the Anglo-American treaty signed in London Mar. 27, 1941 (see GREAT BRITAIN under History). Under a lease incorporated in the treaty, the colonial government set aside 2½ square miles of land on the east bank of the Demerara River 25 miles from its mouth for development as a U.S. landplane base. Another tract of 1,400 acres at the mouth of the Essequibo River was leased for 99 years as a seaplane base. The U.S. government undertook not to obstruct navigation on the Demerara and Essequibo Rivers, and to allow the colonial government to quarry stone for public works from the leased areas. Work was begun immediately on the seaplane base, estimated to cost \$1,800,000.

Proposals for constitutional reform, approved by the British Secretary of State for the Colonies, were laid before the legislative council during July, 1941, by the governor. Under the new proposals the legislative council would consist of 21 unofficial members and 3 ex-officio members of the

government; another proposal was that membership in the executive council be not restricted to members of the legislative council. Additional reserve powers for the governor were specified. Recommendations for a wider extension of the franchise were referred for examination to a franchise commission.

United States troops arrived, on July 21, 1941, to garrison the two bases leased from Great Britain. The U.S. air base was named Atkinson Field.

BRITISH HONDURAS. A British colony in Central America. Area, 8,508 square miles; population (Jan. 1, 1940 estimate), 58,759. Vital statistics for 1939 (rate per 1,000): 35.4 births, 18.5 deaths. Capital, Belize, 16,687 inhabitants in 1931. Education (1939): 11,597 students enrolled in primary and secondary schools.

Production and Trade. Mahogany, chicle, bananas, grapefruit, cedar logs, coconuts, and copra were the main products. Forest products represent about 80 per cent of the exports by value Trade (1940): \$2,760,940 for imports and \$3,039,505 for exports (mahogany, chicle, and bananas were the principal items of export. Shipping (1940): 13,659 tons of freight brought in and 50,466 tons taken out. A twice-weekly air service for mails, passengers, and express was in operation to and from San Pedro Sula, Honduras

Government. Finance (1939): \$1,967,662 for revenue and \$1,967,842 for expenditure; public debt (Dec. 31, 1939), \$3,109,364 The control of the government is in the hands of a governor, aided by an executive council. There is a legislative council consisting of the governor as president, 5 official and 8 unofficial members (2 nominated and 6 elected) Governor and Commander-in-Chief, J. A. Hunter (appointed Nov. 18, 1939)

BRITISH MALAYA. The British possessions and dependencies in Malaya, with their areas, latest populations, and capitals, are shown in the accompanying table.

<i>Division (Capital)</i>	<i>Sq mi</i>	<i>Population</i>
British North Borneo (Sandakan)	29,500	299,000 ^a
Brunei (Brunei)	2,226	37,868 ^a
Federated Malay States (Kuala Lumpur)	27,540	1,169,313 ^b
Negeri Sembilan (Seremban)	2,580	290,569
Pahang (Pekan)	13,820	217,121
Perak (Taiping)	7,980	978,638
Selangor (Kuala Lumpur)	3,160	688,185
Sarawak (Kuching)	50,000	600,000 ^c
Straits Settlements (Singapore)	1,356	1,406,120 ^b
Labuan (Victoria)	35	8,872
Malacca (Malacca)	640	232,169
Penang (George Town)	390	411,836
Singapore (Singapore)	291	765,255
Unfederated Malay States	22,276	1,918,831 ^f
Johore (Johore Bahru)	7,500	778,990
Kedah (Alor Star)	3,680	484,933
Kelantan (Kota Bharu)	5,750	593,983
Perlis (Kangar)	316	56,382
Trengganu (Kuala Trengganu)	5,050	204,543

^a Estimate of 1938 ^b Estimate of June 30, 1940 ^c Includes the Dindings ^d Includes Province Wellesley (280 sq mi; pop 168,318; chief town Butterworth) ^e Includes Christmas Island (60 sq mi; pop 1,300) and Cocos (Keeling) Islands (9 sq mi, pop 1,142). ^f Estimate of June 30, 1939

The combined population of the Federated Malay States, Straits Settlements, and the Unfederated Malay States at the end of 1939 was 5,444,833, including 2,332,058 Chinese, 2,259,331 Malays, 744,283 Indians, 30,319 Europeans (including the military which was later increased), and 19,046 Eurasians. Chief cities: Singapore, 750,805 inhabitants in 1939; George Town, 149,408 (1936); Kuala Lumpur, 138,425; Johore Bahru, 97,634; Ipoh, 64,343 (1937); Malacca, 44,180

(1939); Taiping, 38,719; Seremban, 27,839; Klang, 27,948; Alor Star, 25,000; Kuching, 25,000; Kuala Trengganu, 14,000; Sandakan, 13,826; Brunei, 12,000.

Production. The chief products in 1940 were rubber (603,600 long tons, including that of Brunei, Sarawak, and British North Borneo), tin (domestically mined, 84,750 long tons shipped), copra, rice, palm oil, iron, tea, and pineapples. Other products—sugar, areca nuts, timber, resin, phosphate, manganese, bauxite, scheelite, wolframite, and amang ore. During December, 1940, the area of tapped rubber trees was 1,632,136 acres; the area under rice, the main food crop, 793,340 acres

Trade. Federated Malay States, Straits Settlements, and Unfederated Malay States (1940): \$830,255,000 for imports and \$81,128,169,000 for exports. During 1939 some 766,000 tons of liquid fuel and 488,852 tons of gasoline and benzene were imported. Of these amounts, 224,754 tons of liquid fuel and 356,736 tons of gasoline and benzene were reexported. Exports of Malayan produce to the United States during 1940 were valued at \$591,931,000, an increase of 84 per cent over 1939. Imports from the United States in 1940 totaled \$38,037,000, an increase of 107.8 per cent over 1939. Gross exports of rubber in 1940, including reexports of 234,319 long tons from near-by countries, amounted to 772,767 long tons valued at \$629,598,000 (an advance of 68 per cent by value over 1939). Total exports (1940) of tin, including reexports, amounted to 130,935 long tons. Figures of trade not included in the above totals were: British North Borneo (1940, imports \$9,978,419 and exports \$20,270,502), Brunei (1939, imports \$3,256,768 and exports \$7,858,878), Sarawak (1939, imports \$26,173,420 and exports \$34,379,748).

Communications. An air service between Singapore and San Francisco, by way of Manila, was inaugurated by Pan American Airways on May 10, 1941. Air services to African destinations ending at Durban were resumed during 1941 on the basis of one trip per week in each direction. There are air services between Singapore and the Near East, Singapore and Sydney, Australia, and air-mail facilities to Manila, Philippine Islands, on alternate weeks to connect with Pan American Airways. Roads (1940): 7,873 miles.

Finance. Federated Malay States (1941 estimates, excluding war taxation and expenditure): \$77,500,000 (\$97,000,000 in 1940) for revenue and \$72,000,000 (\$82,000,000) for expenditure. Straits Settlements budget (1941): \$46,294,000 for revenue and \$57,292,000 for expenditure. Unfederated Malay States (actual 1939-40 for Kedah, and Perlis; actual 1939 for Johore, Kelantan, and Trengganu): \$32,741,564 for revenue and \$36,273,936 for expenditure. British North Borneo, Brunei, and Sarawak (actual 1939 figures): \$9,608,752 for revenue and \$7,324,443 for expenditure. The average annual exchange value for the Straits dollar (\$) was \$0.5174 for 1939; \$0.4698, 1940.

Government. The Governor of the Straits Settlements also serves as High Commissioner for the Federated and Unfederated Malay States and Brunei and as Agent for British North Borneo and Sarawak. The Straits Settlements constitute a crown colony; it is administered by the Governor with the aid of executive and legislative councils. The other Malay States are all protectorates with different degrees of British control. British Residents advise the rulers of each of the Federated and Unfederated Malay States. The Federated Malay States have, in

addition, a Federal Council and their policy in Federal matters is coordinated by the High Commissioner through the Federal Secretary. British North Borneo is administered by the British North Borneo Company under a royal charter. The Sultan of Brunei in 1906 agreed to place the administration in the hands of a British Resident. Sarawak has a British hereditary ruler or rajah, Sir Charles Vyner Brooke, but a Special Commissioner represents the Governor of the Straits Settlements. Governor at Singapore in 1941, Sir Shenton Thomas (appointed in 1934).

History. Fevish preparations for the defense of British Malaya against a threatened Japanese attack were carried forward throughout 1941. The Governor and High Commissioner at Singapore repeatedly issued warnings that the war might soon spread to Malaya. Reinforcements were sent to the Malay Peninsula from Australia, India and Great Britain along with military planes and equipment from the United States. Recruiting of Malays was speeded up. Training for civilian defense proceeded simultaneously with the strengthening of military defenses. Extensive mine fields were laid to guard the sea approaches to the Peninsula. Large sections of the eastern coastline, particularly the entrances to the chief Malay rivers emptying into the China Sea, were placed under military control. The progressive restriction of Japanese commercial and economic activities resulted in the virtual elimination of mining, trading, and banking interests worth millions of dollars.

The Japanese threat led to the coordination of British, Dutch, and United States defense preparations in the East Indies. Early in April conferences were held in Manila between Air Chief Marshal Sir Robert Brooke-Popham, commander-in-chief of British forces throughout eastern Asia; Admiral Thomas C Hart, commander of the U.S. Asiatic fleet; Major Gen. Douglas MacArthur, the Philippine Commonwealth's military adviser; Major Gen. George Grunert, commander of the American forces in the Philippines; and Foreign Minister E. N. van Kleffens of the Netherlands. Military and naval chiefs of the Dutch East Indies and Australia participated in later conferences. Plans for joint British-Dutch defense of their East Indian possessions were completed although no formal mutual defense accord was announced.

Under the stress of the war, Singapore, long the commercial center of Southeastern Asia, assumed growing importance as the chief defense bastion and political center of British colonies and Dominions throughout that region. The British Government established its Far Eastern military headquarters there in 1940, and in 1941 established branches of the Ministry of Information and the Ministry of Economic Warfare. Australia during 1941 sent permanent diplomatic and commercial representatives to Singapore. Conferences of British and Dominion diplomats and officials throughout the Far East were held there. Recognition of the development of Singapore as the British sub-capital for the Far East was seen in the dispatch of Alfred Duff Cooper to that city by the British Government in October. He was sent to devise new machinery for the coordination of Empire defense.

In line with this trend toward modernization of British Malaya's political machinery was the decree issued by the White Rajah of Sarawak, Sir Charles Vyner Brooke, on September 24, establishing what was described as a constitutional monarchy for Sarawak. On April 7 Sir Charles had announced the establishment of a legislative council and pronounced his brother, Bertram, heir to the throne.

Imposition of an income tax in the Straits Settlements for the duration of the war, the issuance of new war loans by the Straits Settlements and the Federated Malay States, and the spread of labor difficulties on rubber estates and tin mines were other developments of the year.

Precautionary defense measures were undertaken on Nov. 29, 1941, when troops throughout Malaya were ordered to their stations and guards and patrols with full war equipment were assigned at important points. On Dec. 1, 1941, Sir Shenton Thomas declared a state of emergency and issued a proclamation ordering up military, naval, and air force volunteers for active duty throughout Malaya. War with Japan commenced on Dec. 8, 1941, a brief official announcement from Singapore stating that the Japanese had landed in North Malaya and that "the enemy are being engaged." A report of Dec. 17, 1941, said that a Japanese force had invaded the rich Miri oil fields of Sarawak on the northwest coast of Sarawak, but had found that the oil refinery as well as the installations of both the Miri and Seria oil fields had been completely destroyed by British troops. A report from Singapore, dated Jan. 1, 1942, announced that British troops had withdrawn from Sarawak and had joined the Netherlands forces in Western Borneo. See AUSTRALIA, GREAT BRITAIN, and JAPAN under *History*; TIN; WORLD WAR.

BRITISH NEW GUINEA. Same as Papua. See AUSTRALIA under *Overseas Territories*.

BRITISH NORTH BORNEO. See BRITISH MALAYA.

BRITISH SOLOMON ISLANDS PROTECTORATE. See BRITISH EMPIRE.

BRITISH SOMALILAND. A British protectorate in East Africa, bounded north by the Gulf of Aden and south by Ethiopia and Italian Somaliland. It was captured by the Italians during August of 1940 and recaptured by British Imperial Forces during March of 1941. Area, 68,000 square miles; population (1938 estimate), 350,000, including 2,700 nonnatives. Chief towns: Bebera (capital), Hargeisa, Buraao, Zeila, Erigavo.

Production and Trade. Livestock raising was the main occupation of the people. In 1936 the protectorate had 2,500,000 sheep, 2,000,000 goats, 1,500,000 camels, 30,000 cattle, 2,000 donkeys, and 1,000 horses. The agricultural crops include maize, barley, sorghum, and wheat. Trade (1938): £728,050 for imports and £207,548 for exports. Cotton piece goods, rice, dates, and sugar were the main imports. The chief exports were sheep, goats, skins, myrrh, and frankincense. Shipping (1938): 158,673 tons cleared.

Government. Finance (1938): £206,074 for revenue and £227,341 for expenditure. Free grant-in-aid from British government (1938), £30,000. Previous to the Italian occupation in August of 1940 the protectorate was administered by a governor (with headquarters at Sheikh). Governor and Commander-in-Chief, V. G. Glenday (appointed Mar. 2, 1939).

For the military campaign by which the British recaptured the protectorate in 1941, see WORLD WAR; ITALIAN EAST AFRICA under *History*.

BRITISH SOUTH AFRICA. See SOUTH AFRICA, UNION OF. **BRITISH WEST AFRICA.** See CAMEROONS, BRITISH; *Gambia* under BRITISH EMPIRE, GOLD COAST; NIGERIA; SIERRA LEONE

BRITISH WEST INDIES. The colonial possessions of Great Britain in the West Indies, consisting of

three main groups of islands: (1) Bahamas, (2) Jamaica and adjacent islands, and (3) other islands scattered throughout the Lesser Antilles (Leeward Islands, Windward Islands, Barbados, Trinidad, and Tobago). Bermuda, British Guiana, and British Honduras (q.v.) are excluded. The area and population of the British West Indies, by main island groups, are shown in the accompanying table. The inhabitants are for the most part Negroes.

Island group (Capital)	Sq. mi.	Pop. (1939)
Bahamas (Nassau)	4,404	69,608
Barbados (Bridgetown)	166	195,548
Jamaica & dependencies (Kingston)	4,720	1,185,920
Jamaica (Kingston)	4,450	1,173,646*
Turks & Caicos Is. (Grand Turk)	166	5,300
Cayman Islands (Georgetown)	104	6,976
Leeward Islands ^b (St. John)	423	93,130
Trinidad & Tobago (Port of Spain)	1,980	473,455
Windward Islands ^b (St. George's)	820	208,162
Totals	12,513	2,286,118

* 1938 estimate ^b The island of Dominica (304 sq. mi.; 51,959 inhabitants in 1939) was transferred from the Leeward Islands to the Windward Islands, Jan. 1, 1940.

Agriculture is the main occupation in virtually all of the islands, the chief crops being sugar (exports estimated at 502,086 tons for 1939-40), cacao, coconuts, cotton, citrus fruit, vegetables, and (in Jamaica) bananas. The tourist business, manufacturing for local consumption, and (in Trinidad) the production of petroleum and asphalt are the other leading sources of income. There is no unified governmental system, the island groups listed above constitute separate colonies, each with a governor appointed by the Crown and with varying degrees of popular representation in their legislative bodies. See the separate article on each colony and its main subdivisions.

History. It was announced in the British parliament in London, on Apr. 2, 1941, that the schemes already approved under the Colonial Development and Welfare Act in respect of the British West Indies included road construction and the development of the fishing industry in Antigua, a tick eradication campaign in the Virgin Islands, an expedition to Indo-China to investigate banana diseases on behalf of Jamaica, and witchbroom disease investigation in Trinidad. As a result of a conference of the representatives of the British West Indian governments, held in Kingston, Jamaica, during August, lists were published prohibiting the importation of luxury goods, and setting up quotas for necessities.

BROADCASTING STATIONS. See RADIO, RADIO PROGRAMS.

BROOKINGS INSTITUTION. An organization devoted to public service through research and training in the social sciences. Established in Washington, D.C., in 1927, it maintains as operating units the Institute of Economics, the Institute for Government Research, and a division of training in which only those who have had at least two years of graduate work are accepted as research fellows.

In carrying out its purpose to aid constructively in the development of sound national policies without regard to the special interests of any group, the Institution conducted during 1940 several investigations, some of which dealt with problems of the defense emergency. The resulting studies were published under the following titles: *Nazi Europe and World Trade*, by Cleona Lewis; *Congressional Apportionment*, by Laurence E. Schmeckebier; *Government of Montgomery County, Maryland*; *Air Mail Payment and the Government*, by F. A.

Spencer; *The Presidents and Civil Disorder*, by Bennett M. Rich; *Government in Relation to Agriculture*, by Edwin G. Nourse; *Fundamental Economic Issues in National Defense*, by Harold G. Moulton; *Effects of the Defense Program on Prices, Wages and Profits*, by Jacobstem and Moulton; *A Short War Through American Industrial Superiority*, by Louis Marlio.

The Institution is supported from endowment funds and annual grants from philanthropic foundations. The officers of the board of trustees for 1941-42 were: Chairman, Dwight F. Davis; vice chairman, Dean C. Acheson; president, Harold G. Moulton; treasurer, Henry P. Seidemann; and secretary, Elizabeth H. Wilson. Headquarters are at 722 Jackson Place, Washington, D.C.

BROOKLYN-BATTERY TUNNEL. See TUNNELS.

BROOKLYN INSTITUTE OF ARTS AND SCIENCES. One of America's oldest and largest institutions for informal education, located in Brooklyn, N.Y. Its public activities are conducted at four centers: The Institute at the Academy of Music, the Central Museum, the Children's Museum, and the Botanic Garden. Founded in 1824, the Institute was incorporated in its present form in 1890. Total membership is about 6,000 and is open to everyone.

The Institute at the Academy of Music presents an adult education program annually of concerts, lectures, forums in every major field of the arts and sciences. Approximate attendance at these events for the season 1940-41 was 210,000. The Institute's Museums possess collections in art, ethnology, and natural science. On June 25, 1941, the Art and Photography Classes formerly conducted at the Institute at the Academy of Music were transferred to the Brooklyn Museum to form the new Art School of the Brooklyn Museum. Attendance at both Museums for the year 1941 totaled 820,243. The Institute's Botanic Garden comprises more than 50 acres and plant houses containing tropical and sub-tropical species. Botanic Garden attendance for the year 1941 totaled 1,753,381.

In 1941 the permanent funds of the Institute amounted to \$4,324,206.01 and the funds to meet current expenses, to \$845,845.93. Under a general reorganization plan adopted in April, 1938, James G. McDonald was named president of the Institute, and Edward C. Blum became Chairman of the Board of Trustees. Julius Bloom is associate director of the Institute at the Academy of Music; Laurance P. Roberts, director of the Museums; Mrs. William Lloyd Garrison, 3d, curator-in-chief of the Children's Museum; C. Stuart Gager, director of the Botanic Garden. Executive offices are located in the Academy of Music, 30 Lafayette Avenue, Brooklyn.

BROWDER, Earl. See COMMUNISM.

BRUNEI. See BRITISH MALAYA

BRUNSWICK. See GERMANY under *Area and Population*.

BUDGET. See PUBLIC FINANCE, the countries under *Finance*. For **BUDGET MESSAGE**, see UNITED STATES under *Foreign Affairs*.

BUILDING. The building industry in 1941 according to the Supply Priorities and Allocations Board, (SPAB), a Federal agency, reached \$11,000,000,000 exclusive of repairs and remodeling. In a drastic move to conserve critical defense materials the SPAB on October 9th ruled that no new public or private construction projects can be started unless they are essential for defense or the health and

safety of the people. This ruling gave Priority Division of the Office of Production Management practically veto power over public projects voted by Congress, as rivers and harbors, ship canals, highway construction, and power developments. Construction workers in many communities will be effected; an estimate for 1941 indicates that defense construction will account for 44 per cent of all buildings, whereas in 1942 it is estimated to rise to more than 75 per cent. In some defense districts, standardized manufacturing and assembling procedures were followed on dwelling units. Wood was largely used, but occasionally welded steel and concrete were employed. To save defense materials, substitutes were considered; as, for instance, instead of glass, a plastic film. Such a film was used in London to replace glass broken in air raids.

The number of new houses reported by the Federal Housing Administration (q.v.), started in the first ten months of 1941, substantially exceeded the total number constructed under FHA inspection in all of 1940. For the first nine months of 1941 construction of industrial type buildings, as reported by *Engineering News-Record*, reached the record total of \$1,517,645,000 with government owned privately operated plants accounting for \$1,117,483,000 of the volume, and privately owned privately operated plants making up the balance, \$400,162,000. Seven-eighths of the privately operated industrial expansion during the first nine months of 1941 was concentrated in three key defense industries—process (chemical) industries, machine and machined part plants, and aircraft and aircraft engine factories.

Military airports, air bases, hangars, and airport facilities, from figures compiled by *Engineering News-Record* totaled \$254,210,000 for ten months of 1941; shipyard, shipway and dry dock construction under the Naval and Lend-Lease programs amounted to \$199,629,000, and other military construction, such as docks, piers, underground magazines, recreational facilities, etc., reached \$78,213,000. These three classes of Federal work brought direct defense expenditures in the unclassified construction field to \$532,052,000 for the year to November 1st.

The Statistical and Research Division of the F. W. Dodge Corp., New York, prepared the following table on value of total construction contracts in 37 eastern cities. Actual values are given for 1940, and estimated for 1941 and 1942. The figures in the estimates are based on the regular factual construction contract coverage of the F. W. Dodge Corp.; they are in conformity with but not directly comparable to the large over-all estimates

of the U.S. Dept. of Commerce, the Office of Production Management, and other governmental agencies.

Restrictions placed upon non-defense and private construction were reflected in a smaller volume of building permits during November. The total declined sharply from October to the lowest level since February, 1940, while falling below the corresponding 1940 figure for the second successive month. November permit valuations for 215 cities of the United States amounted to \$92,339,054, according to Dun & Bradstreet, Inc., New York. This was 26.0 per cent under October with \$124,745,508, and 9.9 per cent below November, 1940, with \$102,539,657.

Geographical Divisions	Eleven Months		Change P. Ct.
	1941	1940	
New England	\$95,727,249	\$79,660,330	+20.2
Middle At'ic	264,176,343	314,517,337	-16.0
South At'ic	151,807,678	158,434,893	-4.2
East Central	319,614,949	275,635,713	+16.0
South Central	146,709,057	124,112,215	+18.2
West Central	74,085,254	65,353,592	+13.4
Mountain	33,743,441	30,358,155	+11.2
Pacific	283,609,138	201,042,459	+41.1
Total U.S.	\$1,369,473,109	\$1,249,114,694	+9.6
New Y'k City	\$146,451,627	\$207,516,720	-29.4
O'side N.Y.C.	\$1,223,021,482	\$1,041,597,974	+17.4

The cumulative turnover of building permits for the 215 cities for the eleven months of the year continued at a peak for eleven years, totaling \$1,369,473,109. This represented an increase of 9.6 per cent over the \$1,249,114,694 for the corresponding 1940 period. New York dropped 29.4 per cent under 1940 with the sum of \$146,451,627, while the balance of the country, with \$1,223,021,482, for the eleven months, showed a year-to-year gain of 17.4 per cent. (See table above.)

	Eleven Months	
	1941	1940
New York, N.Y.	\$146,451,627	\$207,516,720
Los Angeles, Cal.	81,916,470	68,450,116
Detroit, Mich.	72,294,344	68,409,020
San Diego, Cal.	49,858,350	13,009,975
Chicago, Ill.	47,101,787	37,956,249
Washington, D.C.	43,368,995	38,580,420
San Francisco, Cal.	30,392,637	29,452,861
Philadelphia, Pa.	32,704,930	27,808,040
Baltimore, Md.	32,270,736	29,820,549
Seattle, Wash.	26,585,505	12,939,055
Cleveland, Ohio	24,995,000	20,627,500
Cincinnati, Ohio	23,249,117	20,023,590
New Orleans, La.	20,167,802	6,307,813
Houston, Tex.	18,173,521	21,098,210
St. Louis, Mo.	16,641,941	12,657,518
Oakland, Cal.	14,982,637	14,699,101
Denver, Colo.	14,438,047	12,099,088
Hartford, Conn.	14,332,369	8,478,485
Portland, Ore.	14,293,320	9,696,115
Memphis, Tenn.	14,276,009	8,176,856

VALUE OF TOTAL CONSTRUCTION CONTRACTS—37 EASTERN STATES

Classification	1940 Act. Millions of Dollars	* 1941 Estimate		1942 Estimate	
		Millions of Dollars	% Change From '40	Millions of Dollars	% Change from 1941 Est.
Commercial Buildings	318	490	+ 54	330	-33
Manufacturing Buildings	442	1,175	+166	1,175	0
Educational Buildings	147	145	- 1	90	-38
Hospital & Institutional	94	100	+ 6	75	-25
Public Buildings	80	85	+ 6	15	-82
Religious Buildings	46	55	+ 20	15	-73
Social & Recreational	63	80	+ 27	50	-37
Misc. Non-Residential	104	250	+140	110	-56
TOTAL NON-RESIDENTIAL	1,294	2,380	+ 84	1,860	-22
Apartments, Hotels & Dorms	331	255	- 23	100	-61
1 & 2 Family Houses	1,155	1,625	+ 41	1,075	-34
Other Shelter	111	160	+ 44	50	-69
TOTAL RESIDENTIAL	1,597	2,040	+ 28	1,225	-40
TOTAL BUILDING	2,891	4,420	+ 53	3,085	-30
TOTAL PUB. WORKS & UTILITIES	1,112	1,710	+ 54	1,100	-36
TOTAL CONSTRUCTION	4,003	6,130	+ 53	4,185	-32

* Based on 10 months data.

A regional tabulation for the first eleven months of 1941 and 1940 shows all divisions with larger totals than last year, with the exception of the Middle Atlantic and South Atlantic.

Of the twenty leading cities, permit valuations of which are given above, only New York and Houston failed to show improvement over a year ago for the eleven months. San Diego and New Orleans reported a more than three fold rise for the period.

See ARCHITECTURE; BUSINESS REVIEW; CONSTRUCTION INDUSTRY; FEDERAL HOUSING ADMINISTRATION; FOUNDATIONS; HOUSING AUTHORITY, U.S.; SUPPLY PRIORITIES AND ALLOCATIONS BOARD.

CHAS. H. HUGHES.

BULGARIA. A Balkan monarchy. Capital, Sofia. King in 1941, Boris III, who succeeded to the throne Oct. 3, 1918.

Area and Population. Excluding areas annexed from Greece and Yugoslavia in 1941, but including 2,982 square miles of Southern Dobruja, with a population of 378,344, annexed from Rumania on Sept. 7, 1940, Bulgaria has an area of 42,797 square miles and a population estimated at 6,720,000. Estimated population of Sofia (with suburbs) in 1937: 350,000; of other cities in 1936: Plovdiv (Philippopolis), 125,000; Varna, 75,000; Ruse (Ruschuk), 51,000; Burgas, 30,000.

National Defense. The military restrictions imposed upon Bulgaria by the Treaty of Neuilly in 1919 were removed July 31, 1938. As of November, 1940, there were an estimated 350,000 men under arms, not including the air force of 3,200 men, and 320,000 trained reserves. The defense force was relatively weak in modern armaments, but this deficiency was being made up rapidly with German aid.

Education and Religion. At the 1934 census 20.4 per cent of the males and 42.8 per cent of the females were illiterate. Schools of all classes numbered 7,782, with 1,086,849 students, in 1937-38 (including 5,335 elementary schools with 659,633 pupils). The American College of Sofia was the only one of the six American colleges in the Near East that remained open throughout 1941. It had about 500 students. The 1934 census showed 5,128,890 members of the Orthodox Church of Bulgaria, 821,298 Moslems, 48,398 Jews, 45,704 Roman Catholics, 23,476 Armenian-Gregorians, and 8,371 Protestants.

Production. About four-fifths of the population live by agriculture and fishing. Production of cereals in 1940 was estimated at 3,400,000 metric tons (3,560,000 in 1939); leaf tobacco, 40,000 tons; rose oil, 1,600 kilograms, cotton, about 14,000 tons; beet sugar, 30,000 tons; raw silk, 19,200 tons (1939). Other production was (in metric tons): Lignite, 2,004,000 in 1940, coal, 145,000 in 1938; cement, 194,000 in 1938; salt, 77,000 in 1938.

Foreign Trade. A law of June 1, 1940, established a Foreign Trade Administration to organize and control imports and exports. Including bullion, specie and the exchange premium, imports in 1940 totaled 7,028,400,000 leva (5,197,200,000 in 1939); exports, 7,018,800,000 leva (6,064,800,000). Germany supplied 69.6 per cent of the 1940 imports (65.5 in 1939) and purchased 59.2 per cent of the exports (67.8 in 1939). The leading exports in 1939 were (in 1,000 leva): Tobacco, 2,486,411; fruit, 1,114,103; eggs, 512,062; wheat, 442,505; hides, 168,588; wine, 125,514.

Finance. In 1940 budget receipts and expenditures, including the separate railways budget but exclud-

ing extraordinary credits, amounted to 11,821,612,000 and 11,422,064,000 leva, respectively, compared with 10,216,921,000 and 9,868,715,000 leva in 1939. Budget estimates for 1941, excluding the railways budget, were: Receipts, 10,160,600,000 leva; expenditures, 10,095,922,000. The internal public debt rose from 8,805,000,000 leva on June 30, 1939, to 14,335,000,000 leva on May 31, 1940, while the external debt declined from 12,946,000,000 to 12,612,000,000 leva during the same period. The official exchange rate was 84 leva to \$1.00 in U.S. currency or 1 lev equals \$0.0119.

Transportation. In 1940 Bulgaria had about 2,130 miles of railway lines, all state-owned; 19,605 miles of roads; and airlines connecting with the principal European cities. Railway traffic statistics for 1940 were: Passengers, 12,500,000, freight, 6,400,000 metric tons; receipts, 1,875,000,000 leva. New railway lines of considerable strategic value were under construction in 1941, notably the last link in a new direct route between Sofia and the Black Sea port of Burgas. Freight handled at the Danube and Black Sea ports of Bulgaria in 1939 was estimated at 990,000 metric tons.

Government. The Constitution of 1879 remained suspended from the Georgiev coup d'état of May 19, 1934, through 1941. All political parties were dissolved in 1934 and the formation of new ones was prohibited. King Boris ruled as virtual dictator after overthrowing Premier Georgiev's dictatorship on Jan. 22, 1935. The parliaments elected in March, 1938, and in December, 1939-January, 1940, were deprived of practically all legislative powers. The former political parties were not permitted to present candidates or otherwise participate in the electoral campaigns. Deputies were elected on a personal basis and government manipulation of the electoral machinery produced pro-government majorities (of 140 out of 160 members of the Sobranie in the latter elections). Premier in 1941, Bogdan Philov (appointed Feb. 15, 1940), heading a cabinet composed mostly of independents.

HISTORY

Bulgaria Joins the Axis. The many-sided diplomatic and economic struggle to determine Bulgaria's alignment in the World War ended with a complete German victory on Mar. 1, 1941. Ignoring British, Soviet, Turkish, and Greek efforts to keep Bulgaria neutral, Premier Philov signed the Axis pact of Sept. 27, 1940, at a ceremony in Vienna attended by Reichsfuehrer Hitler. Earlier the same day, German troops crossed the Rumanian frontier and commenced the military occupation of Bulgaria with the assent of the Sofia authorities. On March 2 the government majority in the Sobranie ratified the government's signature of the Axis pact over the vigorous protests of the pro-Soviet opposition minority.

Bulgaria thus formally accepted its role as a German satellite, yielding to mingled threats of invasion, promises of territorial compensation, and economic pressure. It undertook to give any Axis country military and economic assistance if attacked by a previously nonbelligerent power. It placed its territory, airfields, communications systems, and other facilities at the disposal of the German war machine for the subsequent successful attack upon Yugoslavia and Greece. Finally the Bulgarian Government accepted German guidance in reorganizing the Bulgarian economic system as part of Hitler's "new order" in Europe.

Preparations for Occupation. King Boris's decision to take Bulgaria into the Axis apparently was reached during the latter part of 1940. But his

course was not revealed until Germany had completed the necessary military and diplomatic preparations to prevent a violent reaction within Bulgaria or on the part of neighboring anti-Nazi countries. Accompanied by the German Minister in Sofia, Premier Philov visited Vienna "for his health" immediately after issuing a New Year's Day reminder to the Bulgarian people that "God helps him who helps himself." On January 2 government officials in Sofia announced that Bulgaria would be forced to permit German forces to cross its territory if such a demand were made by Berlin.

Following his return to Sofia, Premier Philov on January 12 said that Bulgaria might be forced into the war if German pressure grew stronger, but that in the meantime it would remain strictly neutral, rejecting Communist, Nazi, and Fascist doctrines alike. Moscow on the same day took occasion to deny that it had been asked for or given its consent to German troop movements into Bulgaria. Members of the Philov Cabinet subsequently intensified their indirect campaign to prepare the nation for an alliance with Germany. The Agrarian and Communist minority, on the other hand, waged an active propaganda struggle to align Bulgaria with the Soviet Union through a mutual assistance pact.

The resignation of the pro-Nazi Minister of Agriculture, Ivan Bagrianov, on February 4 was mistakenly construed as a setback to German policy. But in a radio broadcast of February 9, the British Prime Minister announced that "a considerable German army and air force is being built up in Rumania and its forward tentacles have already penetrated Bulgaria with, we must suppose, the acquiescence of the Bulgarian Government." Asserting that German ground personnel "numbering thousands" were occupying Bulgarian airfields, he reminded Bulgaria of the dismemberment that followed its disregard of British warnings not to enter the first World War.

Sofia authorities formally denied Prime Minister Churchill's charges. They asserted that the only Germans in Bulgaria were a few officers and men who had long been training the Bulgarian army to use equipment obtained from the Reich. However foreign correspondents in Sofia and other parts of the country testified to the steady infiltration of German military technicians and soldiers disguised as tourists and business men. On February 13 the Bulgarian Foreign Office admitted that Germany was ready to march an army through Bulgaria to the Greek frontier in order to end the war between Greece and Italy. The Government began to arrest some of the anti-Nazi opposition leaders.

Treaty with Turkey. Another bar to Bulgaria's military collaboration with the Reich was removed on February 17 when Bulgaria and Turkey signed a declaration of friendship and nonaggression. The two governments also agreed "to maintain and further develop mutual confidence in their friendly relations," to develop mutual commerce, and to discourage recriminations by the Bulgarian and Turkish press. This declaration temporarily relieved Bulgarian fears that Turkey would carry out its 1940 threat to enter the war if German troops crossed Bulgaria to attack Greece.

The Turkish Foreign Minister on February 23 repudiated this interpretation of the Turkish-Bulgarian accord. But on February 20 the Sofia Government mobilized workers in the railway and other essential services, and the same day German engineers started to erect pontoon bridges across the Danube from Rumania. Two days later German General Staff officers began to arrive in Sofia in civilian attire. The British Legation on February 24

destroyed its confidential records, while the Bulgarian Government ordered nation-wide blackouts. Three days later the British Minister, George Rendel, threatened that Bulgaria would become "a theater of war" if he was forced to withdraw from Sofia.

German Troops Enter. However Bulgaria's decision was made. At dawn on March 1 German bombers roared over Sofia and landed troops at various airports, while armored columns crossed the Danube pontoon bridges from Rumania and sped southward to take up positions along the Greek and Turkish frontiers. By March 3 the German forces had taken over control of all strategic points throughout the country, while Bulgarian troops were being mobilized to cope with a possible Turkish attack. A wildly cheering government majority in the Sobranie on March 2 authorized a "temporary" German military occupation of Bulgarian military bases. Premier Philov declared that the presence of German troops had not changed Bulgaria's policy of peace, and that her friendship treaties with neighboring states remained unaffected. Repeated acts of sabotage and of hostility toward the Germans indicated that the country was by no means unanimous in approving the occupation.

The Foreign Reaction. The Turkish Government did not carry out its threat to break with Bulgaria and enter the conflict on the British side. The Soviet Government expressed its disapproval of Bulgaria's course in a note of March 3. The note asserted that Bulgaria's policy would extend the sphere of the war and involve Bulgaria in the conflict, and that consequently Moscow could not support Sofia in the application of its pro-Nazi policy.

President Roosevelt on March 3 "froze" Bulgarian credits in the United States. On March 4 Bulgaria broke off diplomatic relations with the exiled governments of Poland, Belgium, and the Netherlands, whose diplomatic representatives had remained at their posts in Sofia. The British Government on March 5 severed diplomatic relations with Bulgaria, pointing out that Bulgaria's agreement with Germany facilitated "the German aim . . . to menace and, if necessary, attack Great Britain's ally, Greece." The British Minister left Sofia with a warning that Bulgaria might suffer like Italy for its capitulation to the Reich. He narrowly escaped death when time bombs exploded in luggage accompanying the British mission upon its arrival in Istanbul on March 11. Two members of the legation staff were mortally wounded and others seriously injured. The Turkish police expressed the conviction that the bombs were planted in the luggage in Sofia by the IMRO, Macedonian terrorist organization, whose members were said to be in German pay.

Bulgaria's Role in War. Following the launching of the German attack upon Yugoslavia and Greece from Bulgarian soil, the British and Yugoslav air forces carried out several raids on Bulgarian centers. Sofia was bombed by the R.A.F. on the nights of April 6 and 13. Bulgarian forces took no part in the fighting in Yugoslavia and Greece, according to a statement by Premier Philov on April 8. However on April 15 Bulgaria broke off diplomatic relations with Yugoslavia in view of "unprovoked" Serb air attacks upon Bulgarian soil. On April 19 Sofia announced that Bulgarian troops were completing the occupation of Greek and Yugoslav Macedonia, conquered by the German armed forces. Later it was announced that Bulgarian forces had replaced German troops in occupation of the Greek territories of Western Thrace, the districts of Florina and Kastoria, and the islands of Samothrace and Thasos.

In all these territories a policy of denationalization and Bulgarianization was introduced, which provoked bloody revolts and deep hatred among Greeks and Macedonian Serbs. There were charges of large-scale Bulgarian atrocities (see GREECE and YUGOSLAVIA under *History*), which were denied in Sofia.

Dispute with Italy. The Bulgarians resented the Italian occupation of the Macedonian towns of Tetovo, Gostivar, and Krushevo in territory promised to Bulgaria by Germany. After King Boris visited Berchtesgaden to discuss this issue with Hitler, the Italians were reported to have withdrawn from the three towns. Delimitation of the new Albanian-Bulgarian frontier was agreed upon by Premier Philov and Foreign Minister Popov during conferences in Rome with Mussolini and other Italian officials on July 21-23. The Bulgarian representatives failed to win Italian consent to Bulgaria's annexation of Salonika, and this issue was put off until the end of the war.

Nonbelligerency Versus Russia. As a result of territorial gains achieved through German military triumphs, Bulgaria gained access to the Aegean Sea, controlled the mouth of the Danube, and acquired substantial new economic resources. Hitler demanded payment for these services in the form of Bulgarian participation in the German attack upon Russia, beginning June 22. King Boris and his Government, knowing the strongly pro-Russian sympathies of the mass of Bulgarians, refused to take the risk.

The pressure from Berlin for Bulgarian assistance in Russia grew severe in September. Bulgaria gave way to the extent of mobilizing its forces and cooperating with the Reich in far-reaching military preparations. On September 11 Moscow accused Bulgaria of serving as a base for German-Italian land, sea, and air attacks upon the Soviet Union. Sofia not only rejected the Soviet protest, but proceeded to ask Turkey for permission to move 13 small "Bulgarian" warships from the Aegean into the Black Sea. The Turks rejected the request. These vessels were reported to have been transferred to the Bulgarian flag by Italy.

Toward the end of September Soviet-Bulgarian relations neared the breaking point, while Germany threatened complete occupation of the kingdom unless Bulgaria entered the war with Russia. Yet the Bulgarian Minister of Interior declared September 24 that the Government did not intend to enter the war. This assurance was repeated by the President of the National Assembly on October 26. Meanwhile Premier Philov on October 15-18 visited Budapest, where plans were laid for further Bulgarian and Hungarian territorial gains at Rumania's expense and for joint resistance to Rumania's revisionist ambitions. At the same time the Sofia authorities joined willingly in German preparations for future invasion of Turkey from bases in Bulgaria.

War with Britain and United States. The Bulgarian Government on November 25 renewed its adherence to the Axis Tripartite Pact for another five years. In accordance with the pact, it followed Germany, Italy, and Japan into war with the United States and Great Britain (December 13). According to the American Minister in Sofia, this action was forced upon Bulgaria by Germany and was popular with neither the people nor Government officials.

Internal Unrest. The Government's stubborn avoidance of war with Russia was attributed to successful anti-Axis risings in Serbia and to widespread disorders provoked by pro-Soviet elements in Bulgaria. The internal disorders developed soon after

the onset of the Russo-German conflict. Despite numerous executions and harsh prison sentences, anti-Government propaganda, espionage, sabotage, and terrorism gained rapid momentum. On October 3 King Boris arrested 300 political prisoners in an effort to check the disorders, but without success.

The growing food shortage and other economic suffering contributed to the mounting discontent and violence. The export of grain was forbidden August 30. On October 10 bread rationing was introduced in Sofia and Philippopolis.

See GERMANY, GREAT BRITAIN, UNION OF SOVIET SOCIALIST REPUBLICS, and YUGOSLAVIA under *History*; FASCISM; WORLD WAR.

BUND, German-American. See FASCISM

BUREAUS, Federal. See under the descriptive word of each title, as CUSTOMS, BUREAU OF.

BURMA. A British dependency. Total area, 261,610 square miles comprising Burma proper, with Chin Hills and Kachin Hills Tracts (192,158 sq. mi.), Shan States (62,335 sq. mi.), and unadministered territory (7,117 sq. mi.). Total population (Dec. 31, 1937, estimate), 15,797,000 compared with (1931 census) 14,667,146 (84.3 per cent Buddhists). Chief cities (1931 populations): Rangoon (capital), 400,415, Mandalay, 147,932, Moulmein, 65,506. Education (1938-39). 8,039 recognized schools and colleges (611,938 students) and 19,020 unrecognized schools (213,295 students)

Production and Trade. The main agricultural products are rice (405,490,000 bu of rough rice in 1940-41), sesamum, maize, jowar (Indian millet), cotton (17,300 met. tons, 1940-41), beans, groundnuts (182,900 met. tons, 1938-39), and rubber (9,600 met. tons, 1940). Teak output from the forest reserves in 1937-38 totaled 283,857 tons. Mineral production (in metric tons)—petroleum (1,116,000 for 1940), tin (4,500, 1938), lead (78,600, 1939), zinc (55,800, 1938), tungsten (3,529, 1938), silver (192 1, 1939), gold, antimony, copper, rubies, and jadeite. Trade (1940): Rs270,350,000 for imports and Rs531,120,000 for exports (rupee averaged \$0 3328 for 1939, \$0.3016, 1940)

Communications. Railways (1939-40): 2,266 route miles (meter gauge); 4,001,000 tons of freight and 18,920,308 passengers were carried. The Burma Road, from the railhead at Lashio to the Chinese border, was China's chief avenue for foreign supplies. As a means of supplementing this important route, a railway (financed by the British government) was under construction in Burma from Lashio to the Chinese frontier where it would link up with the Chinese railway being built from Kunming, capital of Yunnan. Roads (1940). 12,138 miles. Burma's great river, the Irrawaddy, and its navigable tributaries provide an important means of transport for commerce.

Government. Finance (1940-41 estimates): Rs160,306,000 for revenue and Rs164,660,000 for expenditure. Burma was separated from India on Apr. 1, 1937, and has its own constitution and government. Executive power is vested in a governor (appointed by the Crown) who is advised by a council of ministers of not more than 10 members. The governor has control over foreign affairs. Under the constitution the domestic affairs of Burma are administered by a Burman ministry, responsible to a Burman legislature consisting of a senate of 36 members (18 elected by the house of representatives and 18 appointed by the governor) and a house of representatives of 132 members elected on a wide franchise, including women. Large areas

in the northern and eastern hill districts were excluded from the legislature's control and placed under the jurisdiction of the governor. On Mar. 31, 1941, Burma's new national flag—a blue ensign bearing Burma's emblem, a peacock on a golden ground—was hoisted. Governor, Sir Reginald Dorman-Smith (succeeded Sir Archibald Cochrane during May of 1941); Premier, U Maung Saw.

History. Sir Archibald Cochrane, the governor, on Feb. 19, 1941, told both houses of the legislature that Burma was an integral and active part of the British Empire's Far Eastern defense organization under the command of Air Chief Marshal Sir Robert Brooke-Popham, the commander-in-chief in the Far East with headquarters in Singapore. The British government provided funds for the extension of the Burma Railway to the Chinese frontier (see above under *Communications*). On June 18, 1941, notes between the British and Chinese governments on the delimitation of the Burmese-Chinese border were exchanged at Chungking, China. One note defines in detail the frontier line between Burma and the Chinese province of Yunnan, the other defines the area on the Burmese side in which Burma agrees to permit Chinese participation up to 49 per cent in mining enterprises that may be undertaken by British concerns. On June 28, 1941, the draft Indo-Burmese Immigration Agreement was initiated in Rangoon (see *Indian Information*, Sept. 1, 1941; p. 212).

Japan's occupation of southern French Indo-China and the consequent threat to Burma and the Burma Road caused the authorities to increase military equipment of all kinds, to build airfields, bring in Royal Air Force contingents, and to arrange for reinforcements from Malaya, India, and the Near East. The military authorities announced on Aug. 2, 1941, that Burma was prepared for both offensive and defensive action based on the chain of airdromes that were completed along Burma's borders with Thailand, French Indo-China, and China. The transit duty of 1 per cent on United States lease-lend goods sent through Burma to China was abolished on Sept. 3, 1941. Great Britain's offer of compensation for loss of the transit-duty revenue was rejected by the Burmese government. Four prominent Burmese political leaders were arrested on Oct. 14, 1941, charged with violating war and defense regulations.

The Burmese Premier, U Maung Saw, who heads a coalition government representative of all political parties, left for London by airplane on Sept. 22, 1941, to discuss with British officials Burma's part in the war effort of the Empire. A pledge that the British government would help Burma attain dominion status after the war, was announced by L. S. Amery, the British Secretary for Burma, on Nov. 4, 1941. In New York City on Nov. 13, 1941, U Maung Saw expressed disappointment at his failure to achieve dominion status for his country in the British Commonwealth of Nations. He said he would visit Canada, New Zealand, and Australia before returning home.

The war was brought to the territory of Burma when Japan declared war against the United States and Great Britain on Dec. 7, 1941. Japanese aircraft engaged in bombing the airports in various parts of Burma. In the first Japanese air raid on Rangoon, the capital, on Dec. 23, 1941, the number of casualties was 600. Of 80 Japanese bombers and pursuit aircraft which appeared over Rangoon on Dec. 26, 1941, and bombed the Aladon Airfield, 26 were shot down by a squadron of the American Volunteer Group of airmen attached to the Chinese Army. It was reported on Dec. 27, 1941, that Gen.

T. J. Hutton, chief of staff of Britain's India command, had been appointed to head the military forces in Burma, with responsibility for the defense of Burma resting with Gen. Sir Archibald P. Wavell, the commander-in-chief for India. See *WORLD WAR*.

BURMA ROAD. See *BURMA, CHINA, FRENCH INDO-CHINA, and JAPAN* under *History*.

BUSES. See *MOTOR VEHICLES; RAPID TRANSIT*.

BUSINESS REVIEW. The national defense and lease-lend programs dominated business conditions in the United States during 1941. While the year witnessed the establishment of a new high record in the volume of production and trade, more and more restrictions were imposed to divert productive capacity from civilian to war needs. However, many consumer goods industries sold more goods than they ever did before, for the restrictions did not become truly effective until very late in the year.

The index of industrial production of the Board of Governors of the Federal Reserve System rose almost without interruption through the year, from 140 in January to 168 in December. The abnormal conditions in industry produced by the war were illustrated by the fact that the Federal Reserve Board found it necessary to revise its index during the year because automobile and other manufacturing plants were no longer turning out the products for which they were built. Man-hours worked were substituted, therefore, for units of product turned out. Through such revision, the index was made more truly representative of the economy of a nation at war.

The year largely marked a period of transition from a peacetime to a war economy. The most drastic restrictions on civilian goods production were imposed only after the outbreak of war in December, except in such industries as silk manufacturing where supplies of raw materials had been cut off earlier due to the breaking off of economic relations with Japan. It then became apparent that consumer goods plants would have to be converted wholesale to the production of war materials as contractors and sub-contractors. The course of business activity during 1941, and comparisons with previous years, was reflected in the adjusted index of industrial production of the Federal Reserve Board as follows:

INDEX OF INDUSTRIAL PRODUCTION FEDERAL RESERVE BOARD *							
<i>Adjusted for seasonal variations, monthly average 1935-39 = 100</i>							
Months	1936	1937	1938	1939	1940	1941	
January	94	116	85	101	122	140	
February	92	118	84	101	116	144	
March	93	120	84	101	113	147	
April	98	120	82	98	112	144	
May	100	121	81	98	116	154	
June	103	119	81	103	122	159	
July	104	120	86	105	122	160	
August	106	119	90	105	124	160	
September	108	115	93	114	127	161	
October	110	107	96	121	130	163	
November	113	96	100	124	134	166	
December	116	87	101	125	139	168	
Annual Indices (unadjusted)							
1922	73	1927	95	1932	58	1937	113
1923	88	1928	99	1933	69	1938	89
1924	82	1929	110	1934	75	1939	108
1925	90	1930	91	1935	87	1940	123
1926	96	1931	75	1936	103	1941	156

* Revised

National defense expenditures, which amounted to \$569,000,000 in January, rose above \$1,800,000,000 for December. It was not surprising, therefore, that durable goods industries, the chief recipients of armament orders, gained much more rapidly

than non-durable goods manufactures. This may be seen from the following comparison of durable and non-durable goods manufactures, as reflected in indices compiled by the Board of Governors of the Federal Reserve System:

DURABLE AND NON-DURABLE MANUFACTURES
FEDERAL RESERVE BOARD
Adjusted for seasonal variation—1935=100

Months	Durable		Non-durable	
	1940	1941	1940	1941
January	134	171	113	123
February	124	176	110	126
March	118	180	107	128
April	116	180	107	131
May	123	190	110	135
June	133	195	114	139
July	136	199	113	138
August	143	199	112	139
September	151	203	112	137
October	155	207	117	138
November	157	209	120	143
December	164	214	124	142
Year	138	194	113	135

The course of industrial activity may be traced in the table at foot of page, including railroad car loadings and other basic indices:

Restrictions Under the Defense Program. Business was conducted to an increasing extent under restrictions imposed in the interests of the defense program and economic stability during the emergency. Virtually every industry was affected directly or indirectly by these restrictions. The most important of them were concerned with priorities and price controls.

The Division of Priorities of the Office of Production Management (q.v.) issued general regulations requiring all sellers to recognize preference ratings accorded holders of defense contracts and others. These preference ratings varied from AA and A-1a, the highest ratings, to A-10. M-orders were issued at various times during the year, beginning with M-1 relating to aluminum, issued on March 22. These M-orders regulated the distribution of individual commodities into defense and essential civilian channels. P or blanket preference orders were given particular industries to enable the companies in the industry to obtain supplies of strategic materials in preference to other buyers. In addition, individual preference certificates were given holders of defense contracts. L-orders limited production of specified types of consumer goods, such as automobiles, electrical refrigerators, and vacuum cleaners. E-orders covered the distribution of scarce equipment, namely machine and cutting tools.

It was found that so many preference ratings and certificates were issued that they called for larger supplies of some scarce materials than were available. Late in the year, therefore, it was decided to shift the control system gradually from a preference

to an allocations or rationing basis. An important step in that direction was the inauguration of the Production Requirement Plan in December. Under this plan, manufacturers of defense and strategic civilian goods filled out Form PD-25A, estimating their scarce materials requirements for the coming quarter and stating the inventories on hand. Knowing total demands for various purposes, the Priorities Division of OPM could compare them with available supplies and thus assign preference ratings to each manufacturer. At the same time, a revised list of scarce materials subject to this plan was issued as Materials List No. 1. Steel and other individual strategic materials were placed under separate full-fledged allocation plans.

With the outbreak of war, resort to rationing was accelerated. The sale of rubber tires and tubes was halted entirely, since it became doubtful that crude rubber could be imported from the Indies. Limited supplies on hand were rationed very strictly to essential civilian users. Passenger automobile sales at retail also were subjected to very strict rationing immediately after the war began.

Business men were also made subject to a lengthening list of price regulations issued by the Office of Price Administration (q.v.). These orders set ceilings, or maximum prices at which sales could be made. Where they were found unsatisfactory, ceilings were revised. Thus, following a rise in the market quotation of raw cotton due to legislation requiring Government loans of 85 per cent of parity to farmers on basic crops, the ceiling on cotton goods prices was made dependent upon the quotation of the raw material, goods quotations rising or falling by a stated amount for each fluctuation of one-half cent a pound in raw cotton up or down.

Most business concerns found it necessary to appoint one or more employes to specialize in the adjustment of their operations to priority and price rulings.

New Construction. Rapidly expanding employment, rising wages, and record industrial activities stimulated both residential and industrial construction. Private building activity was supplemented by a defense housing program launched by several Government agencies concerned with residential construction, as well as by extensive building of military installations and cantonments. A total of about 650,000 new nonfarm housing units were constructed during the year, which compared with 540,000 units in 1940 and 509,000 in 1929.

Full Government control over building activity was established by the order of the Supply Priorities and Allocations Board (q.v.) of Oct. 9, 1941, restricting nondefense construction to projects essential for the health and safety of the civilian population. With the nation at war, this restriction was

INDICES OF ACTIVITY IN CHIEF INDUSTRIES

Years	Freight car loadings		Iron and steel		Bituminous coal		Construction		Automobiles		Manufactured Food Products	
	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941
1936	107		114		110		55		114		98	
1937	111		123		112		59		121		103	
1938	89		68		88		64		67		101	
1939	101		114		99		72		94		108	
1940	109		147		114		81		116		114	
1941	130		186		126		124		142		127	
Months	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941
January	111	122	151	179	119	117	75	103	113	134	111	117
February	105	124	124	179	104	114	63	99	111	143	113	120
March	100	126	107	184	109	149	62	94	111	142	112	121
April	103	112	106	181	120	22	64	103	107	124	111	123
May	106	135	126	184	120	149	64	101	109	152	111	123
June	111	139	152	184	116	153	74	117	113	161	115	127
July	110	138	159	185	121	146	85	139	101	168	110	126
August	112	139	163	185	121	147	90	152	121	141	114	132
September	112	130	169	192	119	139	93	161	121	134	110	129
October	110	127	172	191	98	127	95	145	125	146	118	131
November	116	135	171	191	112	125	111	138	125	142	117	140
December	119	137	174	196	115	124	115	133	125	122	121	139

being interpreted more and more strictly at the end of the year. Military and naval construction in 1941 was four times the 1940 level, and fifteen times that of 1939. See CONSTRUCTION INDUSTRY.

Iron and Steel. The iron and steel industry, despite strenuous efforts, did not quite attain full capacity production. Output aggregated approximately 83,000,000 tons, out of total capacity of about 84,000,000 tons. Minor coke and scrap shortages had much to do with preventing the industry from operating at or somewhat above its full rated capacity. With armaments taking, directly and indirectly, at least 35,000,000 tons of steel, the industry had large backlogs of unfilled orders at all times. With the outbreak of war, furthermore, the controversy over whether or not large increases in its productive capacity should be constructed ended. It was apparent that the steel, machinery, and skilled labor required could not be spared from other requirements.

An 11 per cent wage increase went into effect in the spring, to prevent a threatened strike. While the OPA barred price increases, the high level of production kept profits at a relatively high level. See IRON AND STEEL.

Automobiles. The automobile manufacturing industry was the subject of bitter debate early in the year. The manufacturers, OPM officials, and many persons in the Government favored keeping up production of cars as long as possible, on the ground that it was futile to halt operations and throw hundreds of thousands of people out of work at a time when facilities were not on hand to produce armaments. A number of labor leaders agreed with this viewpoint. Some heads of the C.I.O., however, sponsored the "Reuther plan" for converting automobile factories wholesale to armament production, under joint management with labor unions. When the war broke out, advocates of the Reuther plan charged that their earlier contentions had been upheld, and revived demands that organized labor be given full participation in the conduct of the automobile industry.

Motor vehicles were turned out in near-record volume, despite OPM action placing limitations on the number produced in the last half of the year. Automobile and truck production in the United States aggregated 4,820,000 units during 1941, as compared with 4,469,354 vehicles in 1940. Prices were advanced moderately. The majority of the companies in the industry took on contracts for

the manufacture of armaments. General Motors alone was actively engaged, by the end of the year, in the manufacture of aircraft engines, parts for bombers, shells, machine guns, Diesel engines, and naval gun housings, and had completed plans for the manufacture of heavy tanks, its contracts exceeding \$1,500,000,000. With the complete cessation of automobile production ordered for the end of January, 1942, however, the defense contracts held by the corporation were almost tripled within a few weeks after the turn of the year. In common with other automobile manufacturers, General Motors then found it necessary to convert all plants to war orders as far as possible (see MOTOR VEHICLES). Machinery output lagged behind demand (see diagram).

Other Industries. Textile industries operated at virtual capacity throughout the year. Like other industries producing both for the armed forces and consumers, output was limited only by the equipment on hand. Production in a number of consumer goods industries compared with the previous year as follows (see also separate articles on various industries):

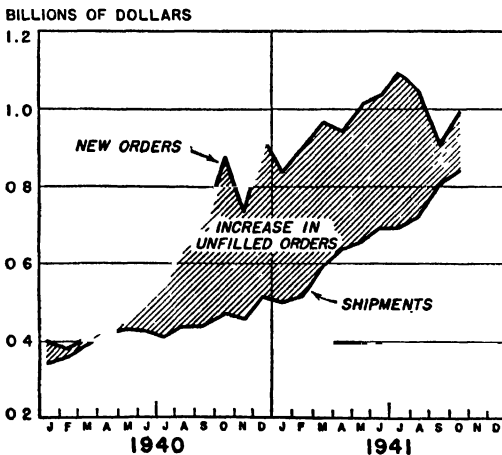
PRODUCTION IN LEADING INDUSTRIES

Industry	1940	1941
Flour milling,* (1,000 bbl)	111,316	114,759
Cotton Textiles ^b		
Cotton used, (1,000 bales)	8,038	10,583 ^P
Spindle Activity, (million spindle hours)	98,183	121,800
Petroleum Refining, output ^c		
Gasoline, (1,000 bbl)	611,359	680,000 ^E
Fuel Oil, (1,000 bbl)	316,218	345,000 ^E
Tire Production, ^d (1,000 units)	59,353	66,163
Paint Sales, ^e (\$1,000)	396,623	533,596
Shoes ^f		
Production, (1,000 pairs)	398,766	492,754
Tobacco Production ^g		
Cigarettes, (billions)	180.7	206.4
Manufactured Tobacco (million lb)	306.6	304.7 ^E
Furniture Production, ^h value, (\$1,000)	450,000	740,000
Motion Pictures, ⁱ cost of production (\$1,000)	160,000	215,600
Number of features	530	* 568
Radio, Net Sales, ^k (1,000 sets)	11,600	13,800
Value, (\$1,000)	400,000	520,000

* Russell-Pearsall, ^b U.S. Bureau of Census, ^c U.S. Bureau of Mines, ^d Rubber Manufacturers Association, ^e U.S. Department of Commerce, ^f Tanners Council, ^g U.S. Treasury, collections report, ^h Seidman & Seidman-Furniture Industry, ⁱ Film Daily Yearbook, ^j Radio Today, ^k Preliminary, * 22 Foreign made, ^E Estimated.

Minerals. Metals were in urgent demand throughout the year, as a result of the war. Virtually all metals were placed under drastic priority restrictions, and supplies were steadily curtailed for non-essential civilian uses. While price ceilings were in effect, arrangements were made to stimulate production by granting higher prices to marginal producers. A plan to pay high premiums for increases in output went into effect shortly after the turn of the year. With the outbreak of war in the Far East, tin supplies were endangered. Imports of strategic metals were increased by heavy government purchases abroad. (For list, see STRATEGIC AND CRITICAL MATERIALS.)

Demand for petroleum advanced steadily through 1941 to new high record levels. Industrial consumption of fuel oil was greatly expanded by the armament program. The Government financed a program to triple the output of 100 octane gasoline to assure adequate supplies of this fuel for the Army and Navy air forces. A shortage of gasoline was feared in the Northeastern states when a number of tankers were turned over to Great Britain in the middle of the year, but many of these vessels were turned back as British shipping losses declined sharply during the latter half year.



From Survey of Current Business
PRODUCERS' MACHINERY AND EQUIPMENT

INDICES OF MINERAL PRODUCTION

Months	Bituminous Coal		Anthracite Coal		Crude Petroleum		Iron Ore		Zinc		Lead		Copper	
	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941
January . .	119	117	114	98	116	114	132	187	119	125	114	116	147	148
February	104	114	80	102	118	113	142	189	180	126	116	116	141	153
March	109	149	86	102	120	112	151	191	124	125	117	118	141	148
April	120	22	86	71	118	113	149	199	123	133	116	119	144	152
May .	120	149	84	80	116	114	152	195	119	127	119	115	141	159
June	116	153	116	126	116	120	155	198	118	136	117	117	143	155
July	121	146	133	137	114	119	159	205	129	125	115	114	142	156
August .	121	147	115	162	108	119	159	202	125	131	114	116	139	155
September	119	139	108	127	114	124	155	192	131	135	112	120	137	154
October	98	127	94	116	115	128	157	181	131	134	117	119	141	151
November	112	125	97	97	115	132	183	200	134	131	113	127	143	152
December	115	124	108	88	114	131	178	199	135	134	116	122	145	154
Year .	115	126	101	109	116	120	155	195	126	130	116	118	142	153

Indices of domestic minerals production computed by the Board of Governors of the Federal Reserve System are compared in the above table with those of 1940

Wholesale and Retail Trade. The volume of trade reflected the rise in the national income to record levels under the stimulus given by the defense program. Unemployment dwindled rapidly through the year, wages rose, and farm income and profits also expanded. Monthly income payments as compiled by the Department of Commerce compared as follows month by month in 1940 and 1941.

MONTHLY INCOME PAYMENTS
[Million Dollars]

Months	1940	1941	Months	1940	1941
January	6,093	6,895	July	6,103	7,474
February	5,604	6,370	August	5,787	7,277
March	5,987	6,977	September	6,467	8,064
April	5,965	6,952	October	6,812	8,255
May	5,689	6,848	November	6,362	7,860
June	6,288	7,690	December	7,534	8,966
			Year	74,690	89,428

The dollar volume of trade was also affected by the rise in the price level. Department store sales for the year were 16 per cent higher than in 1940. The Federal Reserve Board's indices of department store sales and inventories compared as follows, with those of the previous year:

INDICES OF MONTHLY DEPARTMENT STORE SALES AND STOCKS

[1925-26 = 100, adjusted for seasonal variation]

Months	1940		1941	
	Sales	Stocks	Sales	Stocks
January	92	68	101	71
February	90	71	103	73
March	89	70	103	74
April	89	69	104	74
May	89	68	105	74
June	91	67	104	77
July	92	68	115	82
August	98	69	134	87
September	97	70	116	92
October	84	71	105	97
November	100	72	116	95
December	101	71	111	92
Year . .	94	69	110	83

A wave of forward buying developed in retail trade in the late summer, which produced a sharp bulge in sales at that time. The cutting off of silk imports from Japan, which served to remind consumers that imported products might become unavailable for the period of the war, precipitated stocking of goods by consumers. The effect was especially pronounced in sugar and other imported products. Towards the end of the year, priorities began to affect the course of retail sales to an increasing extent, various goods becoming available only in limited supply. Restrictions on supplies, as well as rising taxes which curtailed buying power of the higher income groups of the population, clouded the outlook for trade at the close of the year, particularly in luxury lines and in communities where there was little defense industry.

Commodity Prices. Commodity prices advanced during 1941 as a result of the record volume of demand and restrictions upon supply produced by the war. The Office of Price Administration set ceilings upon an expanding list of commodity prices, and doubtless succeeded in slowing up the rise in the price level to a large extent. However, political pressure from the farm bloc in Congress accelerated the rise in agricultural prices, Congress passing a law requiring that the Commodity Credit Corporation lend growers 85 per cent of parity on basic crops. Opposition from farmers was also chiefly responsible for the failure of Congress to enact the Emergency Price Control bill, which was pending in the national legislature during the latter months of the year.

Wide differences of opinion over price control policy developed during the year. There was general agreement about the need for some price legislation, since it was apparent that wartime conditions would prevent a free price system from performing its normal function of distributing supplies of goods economically. The Government was going to purchase whatever it needed for national defense and lease-lend, and if it competed with private buyers prices would be bid up sharply, leading to a spiral of inflation and raising the cost of armament correspondingly. Bernard M. Baruch, on the basis of the first World War experience, urged upon Congress an over-all freezing of commodity prices, rents, and wages as of a fixed date, with provision for modifications as required by circumstances. Late in the year, Canada undertook an over-all price and wage freezing with at least initial success. On the other hand, organized labor

WHOLESALE PRICE MOVEMENT

[1926 = 100]

Years	Combined Index	Farm Products	Foods	Other Commodities
1929	95.3	104.9	99.9	91.6
1930	86.4	88.3	90.5	85.2
1931	73.0	64.8	74.6	75.0
1932	64.8	48.2	61.0	70.2
1933	65.9	51.4	60.5	71.2
1934	74.9	65.3	70.5	78.4
1935	80.0	78.8	83.7	77.9
1936	80.8	80.9	82.1	79.6
1937	86.3	86.4	85.5	85.3
1938	78.6	68.5	73.6	81.7
1939	77.1	65.3	70.4	81.3
1940	78.6	67.7	71.3	83.0
1941	87.3	82.4	82.7	89.0

Months	Combined Index		Farm products only	
	1940	1941	1940	1941
January	79.4	80.8	69.1	71.6
February	78.7	80.6	68.7	70.3
March	78.4	81.5	67.9	71.6
April	78.6	83.2	69.4	74.4
May	78.4	84.9	67.9	76.4
June	77.5	87.1	66.2	82.1
July	77.7	88.8	66.5	85.8
August	77.4	90.3	65.6	87.4
September	78.0	91.8	66.2	91.0
October	78.7	92.4	66.4	90.0
November	79.6	92.5	68.2	90.6
December	80.0	93.6	69.7	94.7
Year . .	78.6	87.3	67.7	82.4

was very hostile to any suggestion to freeze wage levels, while other groups favored special treatment for their own prices. Price Administrator Leon Henderson favored a policy of selective and flexible price control, in the belief that the advance in the general price level could thus be retarded and made more gradual, while certain prices would be allowed to rise because of increased costs, the need for stimulating production for war needs, etc. The Secretary of Agriculture wanted higher prices for many farm products to increase output.

The index of wholesale prices of the Bureau of Labor Statistics fluctuated during 1941 as shown in the table at the foot of page 92.

Prices of major commodities at wholesale compared as follows at the end of December with quotations a year earlier:

MAJOR WHOLESALE COMMODITY PRICES
(End of December)

Commodity	1940	1941
Wheat #2, K C, bu	\$0 86½	\$1 27¼
Corn #3, yellow, Chi, bu	04	80
Flour, bbl	5 05	6 70
Pork loins, lb	.15	20
Butter, extra, lb	33¼	34¼
Eggs, frsts, doz.	25	34
Potatoes, white, bag	1 10	2 10
Canned peaches, doz, factory	1.30	1 87½
Sugar, Cuban raw, lb*	.0291	.035
Coffee, Santos, lb.*	075	13¼
Cocoa, Acera, lb*	0532	095
Cotton, Galveston, lb.	097	1700
Print cloths, yard*	05½	083½
Wool, territory, Boston, lb*	1 08	1 17
Silk, raw, lb*	2 57	3 08
Ravon, viscose, lb	53	55
Pig iron, Valley, ton*	24 00	24 00
Steel bars, Pittsburgh, 100 lb*	2.15	2 15
Copper, lb*	.12	.12
Zinc, E St Louis, lb	.07¼	08¼
Lead, lb*	.0555	.059
Sulphuric acid, ton	16 50	16 50
Soda, caustic, 100 lb	2 00	2 00
Southern pine, K C, 1,000 ft	32 86	40 50
Turpentine, gal	44	80½
Linseed oil, lb	.09	.111
Coal, bituminous, ton, Clearfield	2 65	2 70
Coal, anthracite, ton	6 25	6 75
Petroleum, crude, K-O, bbl*	1 02	1 17
Bunker oil, C, bbl.	1 25	1 45
Rubber, lb.*	20½	22½
Hides, heavy native, Chi., lb	.13½	15½

Source Journal of Commerce, quotations for New York City unless otherwise indicated
* Voluntary and OPA ceilings imposed during 1941.

Retail prices, as usual, followed the course of wholesale prices, but lagged behind them. Whereas the wholesale price index of the Bureau of Labor Statistics rose by over 16 per cent during the year, the Bureau's cost of living index advanced by 10 per cent. Far wider advances were registered in prices of many luxury and semi-luxury goods than in the staples included in the index.

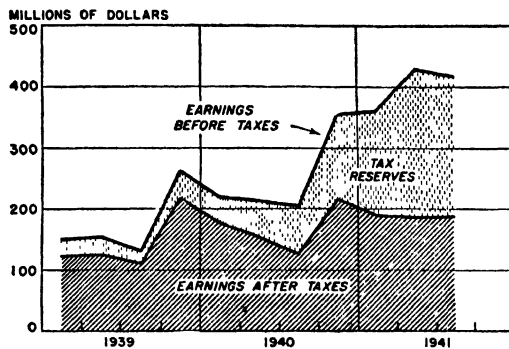
Retail price indices compiled by the National Industrial Conference Board fluctuated as follows during 1941, with comparisons with the year before:

INDICES OF RETAIL PRICES
(1925 = 100)

Months	Food*		Clothing		Fuel and Light		Total Cost of Living*	
	1940	1941	1940	1941	1940	1941	1940	1941
Jan.	76 3	78 7	73 0	73 0	85 8	86 4	84 6	86 0
Feb.	77 8	78 8	73 2	73 1	86 0	86 4	85 1	86 1
Mar	76 9	79 2	73 2	73 2	85 8	86 4	84 8	86 3
Apr	77 4	81 0	73 2	73 3	85 4	86 4	85 0	86 9
May	78 1	82 2	73 1	73 6	84 1	86 4	85 2	87 4
June	79 1	85 5	73 1	73 6	84 2	86 7	85 5	88 5
July	78 4	86 2	73 1	73 8	84 5	87 8	85 4	88 9
Aug.	77 4	87 3	73 0	74 5	84 8	88 6	85 1	89 4
Sept.	78 2	89 4	73 1	76 9	85 3	89 4	85 6	90 8
Oct.	77 4	90 7	73 1	78 3	85 9	90 0	85 5	92 0
Nov.	77 2	92 2	73 1	79 6	86 3	90 2	85 5	92 9
Dec	78 2	92 6	73 0	80 1	86 5	90 3	85 8	93 4
Year	77.7	85.3	73.1	75.2	85.4	88.0	85.3	89.1

* Revised series, based on U.S. Department of Labor on 1935-39 = 100 basis.

Industrial Earnings. Expansion of sales volume increased profits sharply in most industries early in the year. Despite the imposition of many price ceilings by the Office of Price Administration, the larger volume of business reduced unit costs and so expanded total profits. Sharp tax increases, however, began to take their toll. By and large, profits for the first quarter of the year represented the peak, and higher taxes thereafter flattened out the profits curve. The accompanying chart illustrates how higher taxes became the limiting factor on profits during the year. However, corporate earnings as a whole did register a material rise over the 1940 level.



Board of Governors, Federal Reserve System

INDUSTRIAL EARNINGS AND TAX RESERVES
(122 large corporations)

Industries whose sales were not expanded substantially by the defense program, directly or indirectly, were adversely affected by the rise in taxes. The public utilities were conspicuous in this group, and leading companies in this industry suffered declines in income. A number of consumer goods industries were affected similarly, several of the tobacco companies reporting smaller net earnings after taxes than in the preceding year. The railroads, on the other hand, were in an especially favorable position because they were not as hard hit by higher taxes as other groups, and showed sharply increased earnings despite the substantial wage increase that went into effect during the last four months of the year (see RAILWAYS).

Commercial Failures. The high level of business and rising prices tended to keep the number of commercial failures at moderate levels. The number of failures and the liabilities involved compared as follows with the preceding year:

COMMERCIAL FAILURES • BY DIVISIONS OF INDUSTRY

Industry	Number		Current Liabilities (thousands of dollars)	
	1940	1941	1940	1941
Manuf and Mining	2,455	1,974	66,799	51,243
Wholesale Trade	1,316	1,045	20,405	18,581
Retail Trade	8,495	7,589	58,115	48,934
Construction	760	701	13,311	10,671
Commercial Services	593	539	8,054	6,875
Total.....	13,619	11,848	166,684	136,104

* Dun & Bradstreet.

Litigation retarded progress on the reorganization of the many railroad systems that are in bankruptcy and equity receivership. (See RAILWAYS.) Integration and simplification of public utility holding company systems was hampered by the severe decline in market quotations of public utility stocks, which made it progressively more difficult for holding companies to dispose of their holdings of operating company securities in order to raise the cash

required to redeem their own senior securities, bonds, and preferred stocks. With the outbreak of war, it was believed more likely that the Securities & Exchange Commission would refrain from pressing for immediate action to dissolve holding company system which failed to meet its standards for geographical integration and for simplification of intercorporate and capital structures.

World Business Trends. War and preparations for war dominated business conditions on every continent. Throughout occupied Europe and in the Axis countries, living standards deteriorated as productive facilities were turned to producing armaments and synthetic substitutes for strategic materials formerly imported, regardless of cost or operating efficiency. Wholesale malnutrition and starvation were reported in particular from the countries which had resisted Germany, and were looted in consequence. The "New Order" failed to include a plan for the economic rehabilitation of occupied territory. The war in Russia produced property damage on an unexampled stage, in view of the "scorched earth" policy that was applied before retreat.

The British dominions and colonies accelerated the shift in their economies to a war basis, including the establishment of new armament plants and the training of large numbers of men for the armed forces. In Latin America, the production of materials required by the United States and the British empire was expanded, and higher prices were realized for such exports. On the other hand, difficulty was encountered in disposing of many commodities normally sold to continental Europe. The extent to which increased exports to the United States offset the loss of continental European markets may be seen from the fact that Latin American exports to this country were about \$400,000,000 greater in 1941 than in 1939. This was equal to almost 80 per cent of all Latin American exports to continental European countries in the latter year. Furthermore, all exports to the United States were paid for in cash, whereas exports to Germany and several other European countries had been subject to clearing agreements that compelled exporting countries to take in return a limited variety of German goods.

Wartime restrictions on supplies and expansion of currency in circulation raised commodity prices in most countries. This in turn led to increasingly drastic restrictions upon prices and rationing of goods, not only in belligerent nations but also in many neutral countries as well. As in the first World War period, a gradual world-wide inflation of commodity prices was in evidence.

The war also tended to stimulate industrialization in a number of more backward regions. Armament industries were established in Australia, India, and other outlying parts of the British empire. New manufacturing industries were set up in Argentina, Brazil, and other Latin American countries to provide manufactured goods formerly obtained in Europe, and even to take the place of supplies previously purchased in the United States but not available because of defense priorities. In fact, the question of whether Latin American requirements should be given a position of priority along with war and essential civilian needs, to retain Latin American goodwill, received a good deal of attention from United States Government officials and those concerned with foreign trade.

A review of the agricultural situation is to be found under **AGRICULTURE** and of labor under **LABOR CONDITIONS**. See the States under **Manufacturing and Trade** and the countries under **Production; BANKS AND BANKING; CONSUMERS' COOPERATIVES;**

FINANCIAL REVIEW; MARKETING; TRADE, FOREIGN; also, the separate articles on branches of industry, as **AERONAUTICS; ELECTRICAL INDUSTRIES; GARMENT INDUSTRY; INSURANCE; RAILWAYS.**

JULES I. BOGEN.

BUTADIENE. See **CHEMISTRY, INDUSTRIAL** under **Rubber.**

BUTTER AND BUTTERFAT. See **DAIRYING.**

BYELO RUSSIAN SOVIET SOCIALIST REPUBLIC. Same as **WHITE RUSSIAN SOVIET SOCIALIST REPUBLIC.**

CAA. Civil Aeronautics Authority. See **AERONAUTICS.**

CABINET, U.S. See **UNITED STATES** under **Administration.**

CADMIUM. Cadmium, a by-product of the zinc smelting industry, is used for electroplating and glass manufacture, for plating bearings, as a rust-resisting plating on iron, as an alloy in copper wire, and in plates for locomotive fireboxes and fire extinguishers. There was a huge increase in the demand for cadmium in 1941 to fill defense and military orders. War requirements call for cadmium for submarine batteries, for plating bolts and nuts for aircraft, and plating wire cloth and shoe nails. It was put under export-license control by the Proclamation of March 4, 1941.

Production of primary metallic cadmium increased about 15 per cent in 1941 to 6,840,000 lb. as compared with 5,921,488 lb. in 1940. Total imports were 147,378 lb. up to September, 1941, of which 136,280 lb. came from Canada and 11,098 from the United Kingdom. The only cadmium imports in 1940 were 27,491 lb., which came from Belgium before the German invasion. The price rose from 80¢ to 90¢ a lb. in March, 1941, and remained there throughout the year.

CAFELITE. See **CHEMISTRY, INDUSTRIAL** under **Plastics.**

CALIFORNIA. A Pacific State. Area: 158,693 sq. mi., including 1,890 sq. mi. of inland water, but excluding Pacific coastal waters, 69 sq. mi. Population: (1940 census) 6,907,387. The urban population comprises 71.0 per cent of the total (U.S. average 56.5 per cent); non-white population, 4.5 per cent (U.S. average, 10.2); elderly (65 years and over) 7.9 per cent. California ranks second among the States in area, fifth in population, and 27th in density, with an average of 44.1 persons per sq. mi. The capital is Sacramento with 105,958 inhabitants; largest city, Los Angeles, 1,504,277. There are 58 counties and 59 cities of more than 10,000 inhabitants (see article on **POPULATION** in 1940 **YEAR BOOK**). For statistics on births, deaths, accidents, et cetera, see **VITAL STATISTICS**.

Education. According to Walter E. Morgan, Assistant Superintendent of Public Instruction, there were 1,765,998 pupils (includes junior college grades) enrolled in the public schools of California during the school year 1939-40, 768,156 in elementary schools and 846,393 in secondary schools. Teachers numbered (1937-38) 46,959 and received an annual average salary of \$1,783 (elementary school); \$2,360 (high school). Total expenditures for the year (1939-40) were \$196,537,467. For higher education, see **California** under **UNIVERSITIES.**

Transportation. State highway mileage in 1939, including streets under State control, totaled 13,653, of which 13,273 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 2,810,566; 2,453,958 were

private and commercial automobiles, and 319,701 trucks and tractor trucks. Gross motor-fuel consumption was 1,948,880,000. Net motor-fuel tax receipts were \$51,978,000, the rate being three cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$27,914,000.

Railways of all classes extended 7,975 miles (Dec. 31, 1939) 2.961 per cent of the total mileage in the United States. Class I steam railways (2,961 miles) reported 25,399,647 tons of revenue freight originating in California in 1940 and 23,157,315 tons terminating in California. There are 182 airports and landing fields in the State (52 lighted fields) and nine seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 2,262 civil aircraft in the State and 9,965 airline transport, commercial, and private pilots (7,857 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 5,832,000, as compared with 5,934,000 acres in 1940. According to the latest census, there are 132,658 farms, valued at \$2,166,452,648, averaging 230 1/2 acres each. Farm population numbered 670,516 or 9.7 per cent of the total. Leading crops with production were: Commercial truck crops, \$98,862,000, oranges, \$87,546,000, 49,284,000 boxes (estimated); hay, \$55,667,000, 4,846,000 tons, grapes, \$53,411,000, 2,411,000 tons, cotton lint, \$35,234,000, 446,000 bales, dry beans, \$26,119,000, 5,139,000 bags, lemons, \$24,057,000, 14,580,000 boxes, peaches, \$23,642,000, 22,252,000 bu; barley, \$18,381,000, 25,529,000 bu; potatoes, \$14,247,000, 20,951,000 bu, walnuts, \$13,409,000, 53,000 tons, dried prunes, \$12,558,000, 182,000 tons, wheat, \$12,006,000, 11,656,000 bu., cottonseed, \$10,408,000, 199,000 tons; rice, \$9,639,000, 9,180,000 bu, apricots, \$9,430,000, 205,000 tons; pears, \$9,043,000, 9,292,000 bu; olives, \$6,622,000, 43,000 tons, flaxseed, \$6,338,000, 3,267,000 bu, gram sorghums, \$6,107,000, 7,020,000 bu.

Manufacturing. According to the latest census (for the year 1939) the total value of manufactured products was \$2,985,028,494. For details, see 1940 YEAR BOOK.

Mineral Production. California ranks third among the States in value of mineral production. Leading products are: Petroleum, 223,881,000 barrels (preliminary figure for 1940) as compared with 224,354,000 barrels valued at \$229,000,000 in 1939; natural gas, 348,361,000 M cubic feet valued at \$91,572,000 (1939); gold, 1,411,800 fine ounces valued at \$49,413,000 in 1941 (1,455,671 fine ounces, \$50,948,485 in 1940); natural gasoline, 607,237,000 gallons, \$35,454,000 (1939); cement, 13,813,362 barrels, \$17,296,522 in 1940 (11,293,989 barrels, \$15,889,395, in 1939); clay products other than pottery and refractories, \$8,304,038 (1939); sand and gravel, 18,913,301 short tons, \$8,988,894 (1940). The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$467,612,196 or 11.04 per cent of the total United States value. See GEOLOGICAL SURVEY.

Trade. According to the 1940 census there were 14,414 wholesale establishments in California, employing 138,278 persons, reporting net sales for 1939 of \$3,840,129,000 and annual pay roll of \$226,304,000. There were 112,428 retail stores with 327,627 employees, reporting sales of \$3,187,809,000 and pay roll of \$383,155,000. Service establishments numbered 51,223 employing 94,602 persons for \$107,247,000 per year, and reporting a business volume amounting to \$328,141,000. The leading business center of the State is Los Angeles

which reported wholesale sales of \$1,285,265,000, retail sales of \$782,842,000, and \$112,999,000 receipts for its service establishments. San Francisco reported sales of \$1,377,614,000 wholesale and \$383,554,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in California was \$193,982,000. Under the Social Security program, financed by Federal funds matching State grants, 156,329 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$37.80 (U.S. average pension, \$21.08); 37,815 dependent children in 15,864 families received average monthly payments of \$47.78 per family (U.S. average, \$32.73); and 7,290 blind persons received \$48.13 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 33,340 and received \$21.61 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 4,761 (\$315,000); NYA student work program, 19,137 (\$187,000); NYA out-of-school work program, 12,370 (\$318,000); WPA, 56,867 (\$4,284,000), other Federal emergency projects, 165 (\$26,000); regular Federal construction projects, 63,231 (\$10,349,000). The Farm Security Administration certified subsistence payments totaling \$85,000 for the month to 5,008 cases.

Legislation. The Legislature convenes in regular session on the first Monday after January first in odd years. It is composed of 40 Senators (16 Democrats and 24 Republicans in 1941) and 80 Representatives (42 Democrats and 38 Republicans). The 54th session adjourned, June 16, without appropriating a cent for unemployment relief for the next two years. It was the longest session in history, except for that of 1939, and more than 4,000 bills were introduced. The following summary of its activities is condensed from *The Sacramento Bee*, June 17, 1941:

The bitter deadlock over demands for abolition of the State Relief Administration continued unbroken when sine die adjournment finally was reached at midnight, sixty hours after the specified time for winding up the session's business. The relief load will fall back on the county governments, without any state money to ease the burden. The anti-SRA contingent, headed by Sen. John Phillips, Republican leader of the movement to shift relief management to the 58 counties, made good on their ultimatum that no dole money would be voted unless liquidation of the SRA was assured. Democratic Governor Olson, who contends some central State agency should supervise relief, was just as adamant in declaring that, if state direction of the dole program were eliminated, he would refuse to sign any bill turning over large appropriations to the counties for relief payments to employable unemployed. His minorities in both houses supported him. Neither side could win and the session ended in a round of recrimination in which each camp blamed the other for the result.

One of the final acts of the assembly was to sustain Governor Olson's veto of the Crittenden proposal which would have permitted distressed building and loan concerns to reorganize under court-approved plans without the consent of the state building and loan commissioner. The national defense drive affected the course of 1941 legislation and produced, directly or indirectly, many of the more significant enactments. Reorganization of the state council of defense falls in that category as do various measures to augment state military facilities and protection of governmental and private preparedness operations from sabotage, espionage, and the activities of subversive groups. The Dillworth anti-spy bill is a case in point. Its avowed purpose is the protection of U.S. Navy operations and secrets from possible foreign espionage agents in the California fishing fleet. The Slater Anti-sabotage Act undertakes to safeguard defense production industrial plants. The Tenney bill calls for the registration of subversive organizations. The Gordon-Rich-Hays hot cargo bill, on which the governor's veto was overridden, prohibits secondary boycotts on services, factories, and commodities during the period of the national emergency.

Aside from the relief issue and the labor-capital squabble over the hot cargo bill, Governor Olson appears to have come out of the session in better shape than he had any reason to anticipate with majorities against him in both houses. Senate-Assembly disagreements over appropriations finally gave him a budget which, exclusive of the unemployment dole question, was cut only \$1,700,000 below his January recommendations. Governor Olson's recommendation that the State tax structure be left unchanged until the treasury general fund deficit has been wiped out also was accepted. The senate sustained his veto of the Ward bill, attempting to cut personal income tax rates in the high brackets. Many of Olson's pet proposals on other subjects failed, however.

Outstanding among other proposals passed this year are Applying the 1939 anti-loan shark regulations and overall limitations on charges to the field of industrial loan companies, reapportionment of California's assembly and congressional districts in line with the 1940 census, the proposed constitutional amendment reorganizing the State board of forestry as a policy agency with fixed terms, the constitutional amendment proposal for annual, sixty-day legislative sessions and annual budgets, a merger of the State immigration and housing division with the State public health department, strengthening the power of law enforcement authorities in the destruction of seized gambling paraphernalia, creating a new State authority charged with the handling of juvenile delinquency problems; prohibiting the sending of uninstruced delegates from California to the political party national conventions; legislation to bring California's laws on old age pensions and the other categorical aids, as well as the employment service, in line with national government regulations to prevent threatened loss of \$45,000,000 in Federal aid money; millions of dollars in special appropriations, including funds for beach erosion control and increases in the State home guard.

Blocked or beaten outright during the session were many important proposals in the mass of legislation offered last January. Public ownership revenue bond legislation to finance local communities and districts in distributing cheap electric power from the Central Valleys Project's Shasta Dam was battled by the Power Trust from start to finish and defeated. So was legislation to regulate professional lobbyists and require public statements of money they spend in Sacramento in connection with lawmaking matters.

At the end of the year, a special war session of the Legislature was still in progress, though in recess until January 12, 1942. Pending were two important measures already passed by the Senate, the California Defense Equipment Act (so-called "little lend-lease" act) and a measure to provide \$1,000,000 for the fire-fighting forces of the State Division of Forestry. The former was designed to provide a fund from which any city, county, district, or other public agency might borrow to finance needed equipment for protection of lives and property; as voted by the Senate, it carried an appropriation of \$5,000,000. Passed and already signed was a law permitting cities and counties to make emergency expenditures of their own for defense purposes.

Finances. Total tax collections in California for the fiscal year ending in June, 1941, were \$368,687,000 (1940: \$330,848,000). Total sales taxes amounted to \$175,984,000, including general sales, \$110,372,000, motor fuel, \$54,365,000, alcoholic beverage, \$11,247,000. Taxes on specific businesses ran to \$23,715,000, general and selective property, \$16,030,000, inheritance, estate, and gift, \$11,939,000, betting, \$3,844,000, and unemployment compensation, \$80,199,000. The net income taxes were \$43,275,000. Cost payments for the operation of general government totaled \$293,753,000 in 1939, the latest year available. (Revenues for the general government for that year were \$372,070,000.) Cost of operation per capita was \$43.53. Total gross debt outstanding in 1941 was \$319,818,000, as compared with \$147,179,000 in 1932.

Officers and Judiciary. The Governor is Culbert L. Olson (Dem.), inaugurated in January, 1939, for a four-year term; Lieutenant Governor, Ellis E. Patterson; Secretary of State, Paul Peek; Attorney General, Earl Warren; State Treasurer, Charles G. Johnson; State Controller, Harry B. Riley; Director of Finance, George Killion. Chief Justice of the

California Supreme Court is Phil S. Gibson; there are six associate members elected by popular vote for 12-year terms.

See **AQUEDUCTS; ENEMY ALIENS; FASHION EVENTS; FLOODS; PRISONS, PAROLE, AND CRIME; TUNNELS; WATERWORKS AND WATER PURIFICATION.**

CAMBODIA. See **FRENCH INDO-CHINA.**

CAMEROONS, British. A territory in West Africa, mandated to Great Britain by the League of Nations. Area, 34,081 square miles. Population (1939), 838,637. Chief products—palm oil, cacao, rubber, bananas. Trade (1939): £225,907 for imports and £424,871 for exports. Finance (1939): £109,264 for revenue and £183,912 for expenditure. Shipping (1939): 510,690 tons entered and cleared the ports of Victoria and Tiko. The territory is attached to various provinces of Nigeria. Administrator, the Governor of Nigeria.

CAMEROUN, French. A territory in western Africa, part of the former German protectorate of Kamerun, mandated to France by the League of Nations in 1922. Area, 162,934 square miles. Population (Jan. 1, 1939), 2,609,000. Capital, Yaounde (20,000 inhabitants). Chief products—groundnuts, maize, palm oil, cacao, gold, diamonds, hides, timber, and ivory. Livestock (1939): 900,000 oxen, 25,000 asses. Communications: 3,105 miles of roads, 314 miles of railways. Trade (1938): 215,212,000 francs for imports and 251,959,000 francs for exports. Budget (1938): 139,439,747 francs for revenue and 118,328,574 francs for expenditure (franc averaged \$0.0288 for 1938).

History. The territory aligned itself with the "Free French" movement late in August of 1940. It was announced on Jan. 21, 1941, that the British government had concluded an economic agreement with General de Gaulle's Council of Defense in which Great Britain undertook to purchase most of the coffee and bananas, and all the cacao, palm kernels and oil, groundnuts, and beniseed from the French Cameroun.

CAMPS, U.S. Army. See **MILITARY PROGRESS** and the topics there referred to.

CANADA. A Dominion of the British Commonwealth of Nations, comprising nine provinces and two territories. (See separate articles on the provinces and territories.) Capital, Ottawa.

Area and Population. The land area, and the census populations of June 1, 1931, and June 1, 1941, are shown by provinces and territories in the accompanying table.

AREA AND POPULATION OF CANADA				
Provinces and territories	Land area, sq miles	Population		
		1931	1941*	
Prince Edward Island	2,184	88,038	93,919	
Nova Scotia	20,743	512,846	573,190	
New Brunswick	27,473	408,219	453,377	
Quebec	523,534	2,874,774	3,319,640	
Ontario	363,282	3,431,683	3,756,632	
Manitoba	219,723	700,139	722,447	
Saskatchewan	237,975	921,785	887,747	
Alberta	248,800	731,605	788,303	
British Columbia	359,279	694,263	809,203	
Yukon Territory	205,346	4,230	4,287	
Northwest Territories	1,258,217	9,204	10,661	
Total	3,466,556	10,376,786	11,419,896	

* Preliminary.

Of the white population in 1931, 5,381,071 were of British origin (English, 2,741,419; Scottish, 1,346,350; Irish, 1,230,808; other, 62,494) and 2,927,990 of French origin.

In 1931, 4,804,728 inhabitants resided in rural districts and 5,572,058 in urban communities. Populations of the chief cities in 1941 (preliminary), with final 1931 figures in parentheses, were: Montreal, without suburbs, 882,398 (818,577); Toronto, 656,930 (631,207); Vancouver, 271,597 (246,593); Winnipeg, 217,994 (218,785); Hamilton, 163,768 (155,547); Ottawa, 149,881 (126,872); Quebec, 147,002 (130,594); Windsor, 103,961 (98,179); Edmonton, 92,404 (79,197); Calgary, 87,264 (83,761); London, 77,043 (71,148), Halifax, 69,326 (59,275); Verdun, 65,927 (60,745); Regina, 57,389 (53,209); Saint John, 50,084 (47,514); Saskatoon, 42,320 (43,291); Victoria, 41,787 (39,082).

Immigration declined from 16,994 arrivals in 1939 to 11,324 in 1940. In the latter total were 4,990 Canadians returned from permanent residence in the United States. During the year ended June 30, 1940, 8,948 persons moved permanently from the United States to Canada and 15,183 from Canada to the United States. Living births in Canada in 1940 numbered 243,835 (21.4 per 1,000); deaths, 110,648 (9.7 per 1,000), marriages, 123,282 (10.8 per 1,000). The birth rate ranged from an average of 25.8 per 1,000 in Quebec to 17.7 in British Columbia.

Education and Religion At the 1931 census, 95.7 per cent of all persons over 10 years could read and write. Of 2,519,114 pupils enrolled in educational institutions in 1938-39, 2,265,061 were in provincially controlled schools, 111,281 in privately controlled schools, 18,752 in Dominion Indian schools, and 124,020 in universities and colleges (48,205 in courses of university standard).

The principal religious groups in Canada at the 1931 census were Roman Catholics, including 186,654 Greek Catholics, 4,285,388, United Church (Methodists, Congregationalists, and Presbyterians), 2,017,375, Anglicans, 1,635,615, Presbyterians (not included in United Church), 870,728, Baptists, 443,341, Lutherans, 394,194; Jewish, 115,614. Of the 2,927,990 Canadians of French origin in 1931, 2,849,096 were Roman Catholics.

Production The estimated gross value of production in 1939 was \$5,821,781,248 and the estimated net value \$3,223,956,573. Of the net value, manufactures accounted for 47.49 per cent, agricultural products 26.24 per cent, mining 12.2, forestry 8.43, construction 5.7, and electric power 4.65. Of the working population, more than 30 per cent were engaged in agriculture, nearly 15 per cent in manufacturing, 8.9 per cent in the chief service industries, and 8.7 per cent in retail trade. The estimated money national income was \$4,784,000,000 (preliminary) for 1940 compared with \$4,409,000,000 for 1939 and \$2,795,000,000 for 1933.

Agriculture. The gross value of agricultural production in 1940 was \$1,235,714,000, of which field crops accounted for \$651,228,000; dairy products, \$240,940,000; farm animals, \$194,913,000; poultry products, \$61,816,000; fruits and vegetables, \$57,358,000; and tobacco, \$10,373,000. Net value of agricultural production was \$886,094,000. The acreage and production of the principal field crops in 1940 and 1941 (estimated) are shown in the accompanying table.

The estimated 1941 production of root and fodder crops, with final 1940 figures in parentheses, was: Potatoes 39,124,000 cwt. (42,300,000); turnips, etc., 34,482,000 cwt. (39,016,000); hay and clover 12,245,000 tons (14,070,000); alfalfa 2,487,000 tons (2,588,000); fodder corn 4,659,000 tons (4,155,000); grain hay 1,416,000 tons (1,916,

CANADIAN FIELD CROPS, 1940 AND 1941

Crops	Area		Production		
	1940 1,000 acres	1941 ^a 1,000 acres	1940 1,000 bu	1941 ^a 1,000 bu	1941 ^{ab} value \$1,000
Wheat	28,726	22,362	551,390	299,401	\$156,250
Oats	12,297	13,841	380,526	346,154	132,460
Barley	4,341	5,549	104,256	116,659	49,519
Rye	1,035	1,078	13,994	12,056	5,547
Peas	82	97	1,355	1,587	3,362
Beans	97	102	1,477	1,715	3,138
Buckwheat	326	277	6,692	5,569	3,666
Mixed grains	1,220	1,329	43,133	41,505	21,617
Flaxseed	397	958	3,189	6,412	7,988
Corn for husking	186	300	6,956	12,036	8,599

^a Preliminary^b Gross farm value.

000), sugar beets 711,700 tons (825,100). The value of all field crops in Canada in 1941 was estimated on Jan. 21, 1942, at \$647,850,000 (\$676,682,000 in 1940). Livestock estimates for June 1, 1941, were: Swine, 5,994,000, sheep, 3,550,000; cattle, 8,907,000; horses, 2,881,000. The wool clip in 1940 was 18,127,000 lb.; butter production, 363,341,000 lb.; cheese, 143,123,400 lb.

Manufacturing. The gross value of industrial production in 1939 was \$3,474,783,528 and the net value \$1,531,051,901. Of the gross value, nonferrous metal smelting and refining accounted for \$262,602,495; primary textiles, \$209,369,551; pulp and paper, \$208,152,295; slaughtering and meat packing, \$185,196,133, butter and cheese, \$122,561,771, automobiles, \$107,463,351, petroleum products, \$104,578,517; flour and feed products, \$101,776,429, sawmill products, \$100,132,597. In 1938 manufacturing establishments numbered 25,200 with 642,016 employees earning salaries and wages of \$705,668,589. The output of central electric stations increased from 14,968 million kilowatt-hours in the first half of 1940 to 15,732 million in the first half of 1941. Production of steel ingots and castings in 1941 was 2,411,887 tons (2,014,172 in 1940), pig iron, 1,365,334 tons (1,168,894 in 1940).

Mining. The value of mineral production rose from \$474,602,059 in 1939 to the record level of \$529,179,434 in 1940. The gold output was 5,322,857 fine oz. valued at \$204,929,995; copper, nickel, lead, and zinc, \$155,839,877; coal, 17,551,326 tons valued at \$54,638,476, asbestos, fluorspar, graphite, magnesitic-dolomite, mica, sulphur, \$18,204,176; natural gas, 35,954,000 M cu. ft., worth \$12,877,515, cement, 7,559,648 bbl., \$11,775,345, sand and gravel, 30,758,961 tons, \$11,664,614; silver, 23,815,715 fine oz., \$9,109,273. The Government withheld details of production and trade in minerals of vital importance in war industries.

The estimated value of production in 1941 was \$533,941,000, divided as follows: Metals, \$393,269,000; fuels, \$83,363,000; nonmetallic minerals, other than fuels, \$31,616,000; structural materials, \$45,693,000. Gold production was 5,322,247 fine oz. valued at \$204,906,000; silver, 20,437,196 fine oz. valued at \$7,813,000.

Forest Products. The capital investment in forest operations in 1939 was estimated at \$198,000,000; employees, 277,240; payroll, \$79,000,000; value of manufactured material cut in Canadian forests, \$157,747,000 (including pulpwood, \$58,303,000; logs and bolts, \$55,685,000; firewood, \$33,058,000).

Fisheries. The value of the 1940 fish catch was \$45,118,000, of which British Columbia contributed \$21,710,000. In order of value, the principal fish caught were salmon, lobster, herring, cod, sardines, and halibut.

Furs. Production of raw furs for the season ended

in June, 1940, was valued at \$16,456,000 (\$14,287,000 in 1938-39). About 35 per cent of the total production came from animals on fur farms. Pelts taken numbered 9,536,000 in 1939-40 and 6,492,000 in 1938-39.

Foreign Trade. Canada's total foreign trade increased from Canadian \$1,686,977,247 in 1939 to \$2,275,168,311 in 1940. Excluding gold, imports in 1940 were \$1,081,950,719 and exports \$1,193,217,592. Exports by leading groups were: Wood, wood products and paper, \$348,006,396; agricultural and vegetable products, \$218,263,811; non-ferrous metals and products, \$194,711,984; animals and animal products, \$164,723,794; iron and its products, \$127,666,846. The United States supplied about 68.8 per cent of all 1940 imports (66.2 in 1939) and took 38 per cent of the exports (41 in 1939); the United Kingdom supplied 14.9 per cent in 1940 (15.2 in 1939) and took 43 per cent (36 in 1939). See TRADE, FOREIGN.

Finance. Budget operations of the Dominion Government for the years 1937-38 to 1941-42 are shown in the accompanying table.

DOMINION FINANCES
(Thousands of Canadian dollars)

Years ended March 31	Total revenues	Ordinary expenditures	Total expenditures	Surplus or deficit (-)
1937-38	\$516,693	\$414,891	\$534,408	-\$17,715
1938-39	502,171	413,032	553,063	-50,892
1939-40	562,093	398,323	680,794	-118,700
1940-41	871,571	393,061	1,266,627*	-395,056*
1941-42 ^b	1,400,000	417,103*	1,768,000*	-368,000*

* Excluding about \$300,000,000 required to finance war trade.
^b Estimates. * Minimum, excluding additional income from unemployment insurance and trust funds and expenditures needed to finance war trade.

Total expenditures of \$1,266,627,000 in 1940-41 accounted for 28 per cent of the estimated national income of \$4,784,000,000 in the calendar year 1940; war expenditures were \$792,000,000 or 17 per cent of the national income. The estimated minimum total expenditures of \$1,768,000,000 in 1941-42 represented 32 per cent of the estimated national income of \$5,400,000,000 in 1941, with war costs absorbing 25 per cent. The Finance Minister estimated the cost of Provincial and municipal governments during 1941-42 at \$575,000,000. The combined Dominion, Provincial, and municipal expenditures were estimated at 40 to 50 per cent of the total 1941 national income.

The gross public debt of the Dominion on Dec. 31, 1940, was \$3,959,236,382 and the net debt \$3,271,259,647 (\$3,152,559,314 on Dec. 31, 1939). Average free market exchange rate of the Canadian dollar was \$0.8514 in 1940 (\$0.9602 in 1939); official rate, \$0.9091 in 1940.

Shipping. The merchant marine in 1940 numbered 8,396 vessels of 1,292,692 tons. During the year the tonnage of sea-going vessels entering Canadian ports was 33,523,965; of vessels in coast-wise trade, 44,361,232; of vessels in inland (Great Lakes, etc.) international trade, 13,142,431. The leading ports, with the registered tonnages of all shipping entered during the fiscal year 1940 were: Vancouver, 11,016,512; Halifax, 8,186,598; Montreal, 8,001,024; Victoria, 6,516,243; Quebec, 3,522,236; Port Arthur, 3,453,778; Toronto, 3,053,020. During 1940, 23,646 Canadian ships of 18,513,994 registered tons and 3,194 American ships of 4,056,089 tons passed through Canadian canals.

Railways, etc. Steam railways in 1940 operated 42,637 miles of line. Carloadings of revenue-earning freight were 2,812,587 in 1940, the highest since 1930. In 1939 the steam railways carried

20,482,296 passengers and 84,631,122 tons of freight; earnings were \$367,179,095 and expenditures \$304,373,285. The highway mileage on Jan. 1, 1940, was 497,707. The last link of the Trans-Canada Highway was completed in 1941. Air traffic statistics for 1940 were: Mileage flown, 11,966,790, revenue passengers, 137,690; freight, 16,686,214 lb.; mail, 2,737,122 lb.

Government. Executive power is exercised in the King's name by the Governor-General of Canada, acting through a responsible ministry. Legislative power rests in a parliament of two houses—a Senate of 96 members appointed for life by the Governor-General on advice of the Cabinet and a House of Commons of 245 members elected for five years (unless the government is sooner dissolved) by popular male and female suffrage. The nine Provinces enjoy a large measure of local autonomy, there being a separate parliament and administration for each. A lieutenant-governor appointed by the Governor-General-in-Council heads each provincial executive. Governor-General in 1941, the Earl of Athlone (installed June 21, 1940).

The Liberal Government sworn in Oct. 23, 1935, was constituted as follows on Jan. 1, 1941: Prime Minister, President of the Privy Council, Secretary of State for External Affairs, William Lyon Mackenzie King; Minister without Portfolio, Raoul Dandurand; Mines and Resources, Thomas Alexander Crerar; Justice and Attorney General, Ernest Lapointe; Public Works and Transport, Pierre J. A. Cardin; National Defense, James L. Ralston; Pensions and National Health, Ian Alistair Mackenzie; Associate Minister of National Defense and Air Minister, Charles Gavan Power; Finance, James L. Ilsley; Fisheries, Joseph Enoil Michaud; Munitions and Supply, Clarence Decatur Howe, Agriculture and National War Service, James Garfield Gardiner; Labor, Norman A. McLarty; Trade and Commerce, James Angus MacKinnon, Secretary of State, Pierre François Casgrain; Postmaster General, William P. Mulock; National Revenue, Colin W. G. Gibson, Minister of National Defense for Navy, Angus Lewis Macdonald.

HISTORY

War Contribution. Canada made a steadily increasing contribution to the Empire's war effort during 1941, as training camps and war industries established during 1939 and 1940 began to produce trained military, naval, and air personnel and equipment for their use in growing numbers and quantities. A succession of convoys took heavy reinforcements to the Canadian forces already in Britain as well as large contingents of Empire airmen and units of Allied troops trained in Canada. The greatest loss sustained by these convoys from enemy action at sea was the sinking of a ship with 75 members of a Canadian military unit, announced May 5. A Canadian force arrived at Hong Kong November 15 and formed part of the garrison that surrendered to the Japanese in December.

As of November 5, more than 110,000 Canadian troops, including a tank brigade, were serving overseas, in addition to about 25 air squadrons trained in Canada under the Empire air scheme. Overseas and home units of the Canadian Air Force totaled 90,000 men. The Canadian Navy increased from 13 ships and a personnel of 1,774 in 1939 to 250 ships with 22,000 officers and men in the middle of 1941. As of Jan. 1, 1941, it comprised 12 destroyers, 39 minesweepers, 54 corvettes, and various auxiliary craft. Over 20,000 workers at 60 shipyards were engaged in the production of naval and merchant ships. The first Dominion-made heavy in-

fantry tank rolled out of shops in Montreal on May 22. Production of cruiser tanks got under way late in June. By the beginning of August 25,000 workers in newly constructed airplane factories were turning out 40 planes per week. In October it was reported that the Canadian war industries were producing complete equipment for an infantry division every six weeks, and output was steadily rising.

The cost of this program (see *Finance*) was met by the assumption of taxes three times greater than before the war, and by loans and war savings certificates aggregating over \$1,500,000,000 up to October 31. Canada was paying her own war costs, including maintenance of Canadian troops (but not air units) overseas. In addition, large amounts of munitions and supplies were being "lease lent" to Britain. Of supplies valued at \$1,155,000,000 sent to the mother country up to Aug 31, 1941, Canada advanced \$905,000,000.

Conscription Issue. Despite the extent of the burden assumed, public opinion during the year reflected the growing conviction that a much greater war contribution was necessary if the Allied cause was to triumph. On February 2 the Prime Minister announced plans for doubling the army overseas, the Empire Air Training Plan, and the Canadian Navy. The campaign for volunteers for overseas service was pushed with vigor. It brought 105,773 voluntary enlistments during the six months ended Oct. 31, 1941 (army, 59,502; air force, 35,108; navy, 11,163). In September a further great expansion of the Commonwealth Air Training Plan was announced.

These measures failed to check the growing demand for compulsory conscription for overseas service. The Government temporized by improving the system of compulsory military service for home defense, introduced Oct 9, 1940. Under this system men between 21 and 23 years of age were called up for 30 days training in the Non-Permanent Active Militia. In March, 1941, the system was revised to provide for four months' training for every able-bodied man reaching the age of 21. On April 26 the Minister of National Defense announced that the first group of four-month draftees would be retained "indefinitely" in service upon completion of their training. An order of August 5 required all men called up for training under the compulsory conscription act to remain in service for the duration of the war. Early in July the Dominion Government barred men eligible for military duty from the civil service.

Critics of the Government were not satisfied with this, however, and when Parliament reassembled early in November Opposition leaders joined in demanding "all-out" participation in the world struggle through imposition of compulsory overseas as well as home service. Prime Minister Mackenzie King on November 12 stated that he would not support conscription for overseas service without consulting the voters. A plebiscite on the issue was forecast for 1942.

French Canada's Attitude. The Government's reluctance to extend conscription to include overseas service was based upon the demonstrated success of its voluntary-service policy in enlisting full French Canadian support for the war, whereas the imposition of overseas conscription in 1917 had provoked large-scale rioting in Quebec Province. Neither the policy of the Vichy Government in France nor the German attack upon Russia swerved French Canada from its official and unofficial support of the Allied cause during 1941. Provincial and Roman Catholic authorities in Quebec partici-

pated in a gesture of loyalty to the British Crown on February 9 when prayers for victory were said in all churches. Cardinal Villeneuve, Archbishop of Quebec, repeatedly urged support of the Dominion's war effort, and in the campaign for overseas volunteers Quebec contributed one-seventh of the total recruits—a showing better than that of some English-speaking provinces. But an unofficial poll of public opinion late in December showed majority sentiment in Quebec still opposed conscription.

Other Political Issues. The Government was also under attack from the Opposition groups for the alleged inadequacy of the output of war industries, for its leniency in dealing with some labor obstruction of the war effort, and for half-way rationing and other economic control measures. Formation of a National Union Government to spur the war effort was urged by the Opposition and a substantial section of the press early in the year.

The Government flatly rejected this proposal, and effectively disposed of the major criticisms launched against it by new legislation and measures. At the opening of the Parliamentary session on February 14, the Prime Minister moved to restrict business in the House of Commons to consideration of war problems. On June 11 a new Minister was added to the Cabinet to take over the National War Services portfolio from James Gardiner, who retained the Ministry of Agriculture. The new Minister of National War Services, Joseph T. Thorson, was charged with the reorganization and supervision of the Dominion information, radio broadcasting, moving picture, and tourist services.

The death at the end of November of Minister of Justice Lapointe was a distinct loss both to the nation and to the Government. As recognized leader of the French Canadians, he had wholeheartedly supported Canada's war policy and thus contributed to the unity of the French- and English-speaking sections. His post as Minister of Justice and Attorney General was filled on December 10 by Louis S. St. Laurent, former president of the Canadian Bar Association. A further reshuffling of the Cabinet took place December 15. Pierre F. Casgrain resigned as Secretary of State to become a judge of the Quebec Supreme Court. Labor Minister McLarty became Secretary of State and Humphrey Mitchell, head of the National War Labor Board, succeeded to the Labor portfolio.

Anti-Strike Measures. Stricter government control was established over many phases of the national economy to speed war production. Increasing pressure was brought upon both labor and management to accept the decisions of the federal conciliation boards in labor disputes. The National Steel Car Corporation's plant in Hamilton, Ont., was taken over by the Government on April 29 when the company refused to follow a conciliation board's order to reinstate a discharged employee who was president of the local unit of the Steel Workers Organizing Committee. On May 2 the Minister of Labor stated that the Government would permit neither employers nor employees to clog the stream of war materials flowing from the factories.

Several strikes in munitions plants in July were ended when the Government threatened to prosecute the strikers. A slow-down movement among coal miners in Nova Scotia and New Brunswick led the Government to declare coal mines "essential services" under the Defense of Canada Regulations. This made leaders of the slow-down agitation liable to prosecution. At the same time the Government undertook to prevent wage and other labor disputes by raising minimum wage rates for employees work-

ing on Government contracts to offset the rising cost of living, and by amending the Industrial Disputes Investigation Act to make conciliation boards more impartial. The compulsory unemployment insurance scheme, adopted in 1940, went into effect July 1, 1941.

An Order in Council of September 16 outlawed all strikes in war industries, including defense construction jobs, except when a majority of the employees voted in favor of a walk-out after a conciliation board had submitted its findings. Due to these and other measures, the Government was able to announce October 2 that there was not a single strike in any Canadian war industry.

Priorities and Price-Wage Control. The economic controls introduced in 1940 (see preceding YEAR BOOK) were rapidly extended during 1941 until at the end of August two Orders in Council were issued making "all goods and services" subject to government regulation. One order made the War-time Prices and Trade Board the supreme authority in the field of price control. The other placed the War-time Industries Control Board in complete charge of the supply and allocation of commodities and materials essential to the war effort.

Acting through these two coordinated boards, the Government rapidly expanded the production of war supplies at the expense of normal consumers' goods, while taking steps to curb inflationary tendencies set in motion by the war boom. Passenger automobile output for 1942 was restricted to less than half the 1940 production. On October 11 installment buying and borrowing was severely restricted. On October 18 Prime Minister Mackenzie King announced that effective November 17—later changed to December 1—"no person may sell any goods or supply any services at a price or rate higher than the maximum price or rate charged by him for such goods or services during the four weeks from September 15 to October 11 of the present year." The Government thus took the revolutionary step of stabilizing both prices and wages (with the exception of a few industries) at the existing rates.

The cost of living had up to that time risen approximately 13.8 per cent over the level prevailing at the outbreak of the war. To compensate for further possible rises in living costs, the Government on October 25 granted a compulsory "cost of living" bonus to wage-earners earning \$25 or more per week at the rate of 25 cents per week for every 1 per cent rise in the cost of living. Labor leaders criticized this program as nullifying their collective bargaining rights, but the Government took the position that there was no other way to avoid the evils of inflation.

New Farm Subsidies. Farmers and fishermen were exempted from the wage-stabilization order. The Government in October decided that additional heavy farm subsidies were required to stimulate production of bacon, butter, etc., for shipment to Britain. Wheat production of the Western provinces was curtailed through a new wheat subsidy policy announced March 12. Calling for a reduction of about 35 per cent in wheat acreage, the Dominion Government established a limit of 230,000,000 bu. on the quantity of wheat it would purchase under the wheat price stabilization program. It undertook to pay farmers for converting wheat acreage into coarse grains, grass, or clover. The Government then had a 575,000,000 bu. carry-over from the large 1940 crop, representing a financial obligation of some \$400,000,000. This situation was relieved by a purchase of 120,000,000 bu. of wheat futures in May by the British Food Ministry from the Canadian

Wheat Board, and by a short 1941 crop. In August Britain contracted for 600,000,000 lb. of bacon and ham for the year beginning Nov. 1, 1941.

Constitutional Reform. Representatives of the Dominion and Provincial Governments met in Ottawa on January 14 to consider the recommendations for reorganization of Dominion-Provincial financial relationships submitted in May, 1940, by the Commission on Dominion-Provincial Relations (see YEAR BOOK for 1940, p. 111 f.) The Premiers of Ontario, British Columbia, and Alberta flatly opposed these recommendations, while the Premiers of Manitoba, Saskatchewan, and Prince Edward Island favored them. The heads of the other three Provinces—Quebec, New Brunswick, and Nova Scotia—were willing to discuss the issue but were otherwise noncommittal. As a result, Prime Minister Mackenzie King on January 15 postponed further discussion of the question until the Provinces could achieve closer unity of opinion.

An important contribution to this issue was made by the Supreme Court of Canada in ruling on December 2 that the Alberta Debt Adjustment Act of 1937 exceeded the constitutional powers of the Provincial Legislature.

Empire Relations. The importance attached to Canadian-British relations was indicated by Prime Minister Churchill's appointment on February 8 of one of his Cabinet Ministers, Malcolm MacDonald, as the new British High Commissioner to Canada. Prime Minister Mackenzie King flew to England on August 20 for personal conferences with Prime Minister Churchill on war problems. In London he expressed opposition to the formation of an Imperial War Cabinet, holding that "important decisions should be made by the government as a whole." He declared that "a perfect, continuous conference of Cabinets (British and Dominion) now exists and there has never been a time when relations were closer between the (Empire) governments." Reviewing Canadian troops in England on August 24, the Prime Minister was booed by many soldiers, who were said to hold him responsible for their non-participation in the Middle Eastern campaigns and for the lack of conscription in Canada for overseas service. He returned to Ottawa by air on September 7.

Within a few hours after the surprise Japanese attack upon British and United States bases in the Pacific and Far East, the Cabinet declared that a state of war existed between Canada and Japan. Measures were taken immediately to strengthen the defenses of the western coast. When Prime Minister Churchill and his staff arrived in Washington later in December, Prime Minister Mackenzie King was invited to the White House to join in the planning of the United Nations' war effort. Arriving there December 26, he was reported to have insisted on separate representation for Canada on any agency created to direct and coordinate war activities. The British, on the other hand, wanted the British Empire to act as a unit.

Notwithstanding this reported difference of opinion, Prime Minister Churchill received an unrestrained welcome and assurances of full support when he arrived in Ottawa December 29 to confer with the War Cabinet and thank the Dominion for its "magnificent aid" to the mother country. On December 30 he spurred Canada to greater effort by a fighting speech before Parliament. Early in 1942 he returned to the United States. One reported result of his visit was the writing off by Canada of loans of \$1,500,000,000 advanced to Britain during the preceding two years.

Collaboration with United States. In his Ottawa

speech, Prime Minister Churchill emphasized Canada's role in forging closer links between Britain and the United States. The successive measures through which the United States moved toward closer collaboration with Britain in the war against the Axis (see GREAT BRITAIN under *History*) were paralleled by the rapid extension of Canadian-American cooperation.

Joint Defense Board. The Permanent Joint Board on Defense established in 1940 (see preceding YEAR BOOK, p. 112) continued its work. On April 17 it announced completion of plans for joint Canadian-American military and naval defense of both the Eastern and Western coasts of Canada and the United States. As part of this program, the Canadian Government during the summer of 1941 constructed a chain of seven airports between Edmonton (Alberta) and White Horse (Yukon Territory). Made available to U.S. military and commercial planes, they provided an interior route between United States and Alaskan air bases. With respect to the United States leases on defense bases in Newfoundland (q.v.), Prime Minister Mackenzie King informed the House of Commons at Ottawa on March 27 that a supplementary protocol to the Anglo-American lease agreement, signed by Canada, provided that Canadian interests in the defense of Newfoundland would be fully respected.

St. Lawrence Waterway. A new agreement on the long projected joint Canadian-American St. Lawrence ship canal and water power project was signed in Ottawa March 19. In an exchange of notes, President Roosevelt and Prime Minister Mackenzie King declared the project essential for the long-range defense needs of both countries, especially through the development of the Great Lakes shipbuilding industry and of the industrial regions adjoining the Great Lakes-St. Lawrence system. The treaty was submitted to the U.S. Senate, where it was still awaiting ratification at the year's end. On March 24 Washington announced that Canada and the United States had agreed to reinterpret the Rush-Bagot Agreement of 1817 in order to permit the construction of warships and facilitate the training of U.S. naval crews on the Great Lakes.

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ing on Government contracts to offset the rising cost of living, and by amending the Industrial Disputes Investigation Act to make conciliation boards more impartial. The compulsory unemployment insurance scheme, adopted in 1940, went into effect July 1, 1941.

An Order in Council of September 16 outlawed all strikes in war industries, including defense construction jobs, except when a majority of the employees voted in favor of a walk-out after a conciliation board had submitted its findings. Due to these and other measures, the Government was able to announce October 2 that there was not a single strike in any Canadian war industry.

Priorities and Price-Wage Control. The economic controls introduced in 1940 (see preceding YEAR BOOK) were rapidly extended during 1941 until at the end of August two Orders in Council were issued making "all goods and services" subject to government regulation. One order made the War-time Prices and Trade Board the supreme authority in the field of price control. The other placed the War-time Industries Control Board in complete charge of the supply and allocation of commodities and materials essential to the war effort.

Acting through these two coordinated boards, the Government rapidly expanded the production of war supplies at the expense of normal consumers' goods, while taking steps to curb inflationary tendencies set in motion by the war boom. Passenger automobile output for 1942 was restricted to less than half the 1940 production. On October 11 installment buying and borrowing was severely restricted. On October 18 Prime Minister Mackenzie King announced that effective November 17—later changed to December 1—"no person may sell any goods or supply any services at a price or rate higher than the maximum price or rate charged by him for such goods or services during the four weeks from September 15 to October 11 of the present year." The Government thus took the revolutionary step of stabilizing both prices and wages (with the exception of a few industries) at the existing rates.

The cost of living had up to that time risen approximately 13.8 per cent over the level prevailing at the outbreak of the war. To compensate for further possible rises in living costs, the Government on October 25 granted a compulsory "cost of living" bonus to wage-earners earning \$25 or more per week at the rate of 25 cents per week for every 1 per cent rise in the cost of living. Labor leaders criticized this program as nullifying their collective bargaining rights, but the Government took the position that there was no other way to avoid the evils of inflation.

New Farm Subsidies. Farmers and fishermen were exempted from the wage-stabilization order. The Government in October decided that additional heavy farm subsidies were required to stimulate production of bacon, butter, etc., for shipment to Britain. Wheat production of the Western provinces was curtailed through a new wheat subsidy policy announced March 12. Calling for a reduction of about 35 per cent in wheat acreage, the Dominion Government established a limit of 230,000,000 bu on the quantity of wheat it would purchase under the wheat price stabilization program. It undertook to pay farmers for converting wheat acreage into coarse grains, grass, or clover. The Government then had a 575,000,000 bu. carry-over from the large 1940 crop, representing a financial obligation of some \$400,000,000. This situation was relieved by a purchase of 120,000,000 bu. of wheat futures in May by the British Food Ministry from the Canadian

Wheat Board, and by a short 1941 crop. In August Britain contracted for 600,000,000 lb. of bacon and ham for the year beginning Nov. 1, 1941.

Constitutional Reform. Representatives of the Dominion and Provincial Governments met in Ottawa on January 14 to consider the recommendations for reorganization of Dominion-Provincial financial relationships submitted in May, 1940, by the Commission on Dominion-Provincial Relations (see YEAR BOOK for 1940, p. 111 f.) The Premiers of Ontario, British Columbia, and Alberta flatly opposed these recommendations, while the Premiers of Manitoba, Saskatchewan, and Prince Edward Island favored them. The heads of the other three Provinces—Quebec, New Brunswick, and Nova Scotia—were willing to discuss the issue but were otherwise noncommittal. As a result, Prime Minister Mackenzie King on January 15 postponed further discussion of the question until the Provinces could achieve closer unity of opinion.

An important contribution to this issue was made by the Supreme Court of Canada in ruling on December 2 that the Alberta Debt Adjustment Act of 1937 exceeded the constitutional powers of the Provincial Legislature.

Empire Relations. The importance attached to Canadian-British relations was indicated by Prime Minister Churchill's appointment on February 8 of one of his Cabinet Ministers, Malcolm MacDonald, as the new British High Commissioner to Canada. Prime Minister Mackenzie King flew to England on August 20 for personal conferences with Prime Minister Churchill on war problems. In London he expressed opposition to the formation of an Imperial War Cabinet, holding that "important decisions should be made by the government as a whole." He declared that "a perfect, continuous conference of Cabinets (British and Dominion) now exists and there has never been a time when relations were closer between the (Empire) governments." Reviewing Canadian troops in England on August 24, the Prime Minister was booed by many soldiers, who were said to hold him responsible for their non-participation in the Middle Eastern campaigns and for the lack of conscription in Canada for overseas service. He returned to Ottawa by air on September 7.

Within a few hours after the surprise Japanese attack upon British and United States bases in the Pacific and Far East, the Cabinet declared that a state of war existed between Canada and Japan. Measures were taken immediately to strengthen the defenses of the western coast. When Prime Minister Churchill and his staff arrived in Washington later in December, Prime Minister Mackenzie King was invited to the White House to join in the planning of the United Nations' war effort. Arriving there December 26, he was reported to have insisted on separate representation for Canada on any agency created to direct and coordinate war activities. The British, on the other hand, wanted the British Empire to act as a unit.

Notwithstanding this reported difference of opinion, Prime Minister Churchill received an unrestrained welcome and assurances of full support when he arrived in Ottawa December 29 to confer with the War Cabinet and thank the Dominion for its "magnificent aid" to the mother country. On December 30 he spurred Canada to greater effort by a fighting speech before Parliament. Early in 1942 he returned to the United States. One reported result of his visit was the writing off by Canada of loans of \$1,500,000,000 advanced to Britain during the preceding two years.

Collaboration with United States. In his Ottawa

speech, Prime Minister Churchill emphasized Canada's role in forging closer links between Britain and the United States. The successive measures through which the United States moved toward closer collaboration with Britain in the war against the Axis (see GREAT BRITAIN under *History*) were paralleled by the rapid extension of Canadian-American cooperation.

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to promote the sale of Canadian manufactures. Trade agreements were concluded with Ecuador and Venezuela.

See CHEMISTRY, INDUSTRIAL; DAIRYING; GREAT BRITAIN under *History*; LABOR CONDITIONS; LIVESTOCK; MUSIC; NAVAL PROGRESS; NEWSPAPERS AND MAGAZINES; PORTS AND HARBORS; ROMAN CATHOLIC CHURCH; SOCIALISM; UNITED STATES under *Canada*; WATER WORKS.

CANADA, The United Church of. The designation applied to the single body formed by the union in 1925 of the Congregational, Methodist, and Presbyterian churches in Canada; the Methodist churches of Newfoundland and Bermuda are also included. Foreign mission work is carried on in Japan, Korea, China, India, Trinidad, and Angola (West Central Africa). In 1940 there were in Canada, Newfoundland, and Bermuda 7,239 preaching places (including home missions) in 2,785 pastoral charges, 716,064 communicant members, and 1,756,634 persons under pastoral care. A total amount of \$11,547,037 was raised for all purposes. At the Ninth General Council held in Winnipeg, Man., in September, 1940, the Rev. Aubrey S. Tuttle, M.A., D.D., was chosen moderator for the ensuing biennium. Rev. Gordon A. Sisco, M.A., D.D., is general secretary. Headquarters: 421 Wesley Building, Toronto, Ont.

CANADIAN LITERATURE. See FRENCH LITERATURE.

CANALS. See AQUEDUCTS, PANAMA CANAL ZONE; PANAMA CANAL; SUEZ CANAL; WATERWAYS, INLAND.

CANARY ISLANDS. An archipelago off the coast of Rio de Oro in northwest Africa. Administratively they form two provinces of Spain, and are named after their respective capitals: (1) Las Palmas (comprising the islands of Gran Canaria, Lanzarote, Fuerteventura, and the islets of Alegranza, Roque del Este, Roque del Oeste, Graciosa, Montaña Clara, and Lobos), area, 1,279 square miles; population (1939), 286,154; capital, Las Palmas (83,553 inhabitants) on Gran Canaria. (2) Santa Cruz de Tenerife (comprising the islands of Tenerife, Palma, Gomera, and Hierro), area, 1,528 square miles; population (1939), 350,647; capital, Santa Cruz de Tenerife (66,429 inhabitants). Las Palmas is an important shipping and tourist center. Coffee-growing is the principal industry. Corn, millet, sugar cane, manioc, fruits, vegetables, tobacco, cotton, indigo, and castor oil are other products.

Construction of a large military base at Las Palmas was initiated late in 1940. In his address of May 27, 1941, President Roosevelt mentioned the Canary Islands as one of the Atlantic island groups which, under German control, would provide "springboards" for aggression upon the Western Hemisphere. An air line connected Grand Canary with Madrid, Spain.

CANCER. See BIOLOGICAL CHEMISTRY; MEDICINE AND SURGERY under *Advances in Surgery*; PUBLIC HEALTH SERVICE; SOCIETIES under *Control of Cancer*.

CANTON ISLAND. An atoll of the Phoenix group in the central Pacific which with Enderbury Island of the same group is under the joint control of Great Britain and the United States (Anglo-U.S.A. Pact of Aug. 10, 1938 and Notes of Apr. 6, 1939). Canton is 29 miles in circumference and has a land mass of from 50 to 600 yards wide which encloses a lagoon of 9 miles in diameter. Enderbury is 2.5 miles long and 1 mile wide. Canton is a port of call

on Pan American Airways' transpacific air service from Honolulu to Auckland, New Zealand, which commenced on July 12, 1940. Besides a complete seaplane base, the facilities installed at Canton after it was occupied in 1938 included a 24-room hotel and other conveniences for passengers. A land-plane runway was under construction in 1941. These facilities were shelled by Japanese warships in December, 1941, but damage was reported to be slight. See WORLD WAR.

CAPE MATAPAN, Battle of. See NAVAL PROGRESS; WORLD WAR.

CAPE OF GOOD HOPE. See SOUTH AFRICA, UNION OF under *Area and Population*.

CAPE VERDE ISLANDS. A dependency of Portugal, 320 miles west of Cape Verde, French West Africa. The islands comprise the Barlavento (windward) group (São Vicente, Santo Antão, São Nicolau, Santa Luzia, Sal, Boavista, Branco, and Raso) and the Sotavento (leeward) group (Santiago, Maio, Fogo, Brava, Rei, and Rombo). Total area, 1,557 square miles; population (Jan. 1, 1938, est.), 165,000 including 6,318 Europeans. Capital, Praia (on Santiago), 6,188 inhabitants. Porte Giande, in São Vicente, is an important fueling station on shipping lines from Europe to South America and Africa. In 1938, 4,433 vessels of 4,240,115 tons entered the ports of the islands. The chief products are sisal, castor oil, mustard, coffee, oranges, maize, tobacco, salt, brandy, and hides. Trade (1938): imports, 107,089,584 escudos; exports, 117,754,489 escudos. Budget (1939): 19,452,000 escudos (escudo averaged \$0.0404 for 1939; \$0.443 for 1938). During 1938 some 4,488 ships aggregating 4,246,395 tons cleared the ports Governor, Maj. A. G. de Figueiredo.

History. In his speech of May 27, 1941, President Roosevelt mentioned the Cape Verde Islands as one of the strategic Atlantic bases which, under German control, might be used as a "springboard" for aggression upon the Western Hemisphere.

CAPITAL MOVEMENTS. See FINANCIAL REVIEW.

CAPTIVE MINES. See LABOR CONDITIONS under *Strikes*, CHRONOLOGY under *November*.

CARBON. See CHEMISTRY, INDUSTRIAL; PHYSICS under *Isotopes*.

CARIBBEAN, Inter-American Union of the. See INTER-AMERICAN UNION OF THE CARIBBEAN.

CARNEGIE ENDOWMENTS. Carnegie Corporation of New York. Established by Andrew Carnegie in 1911, this corporation was formed for the advancement and diffusion of knowledge and understanding among the people of the United States and the British Dominions and Colonies. Its total endowment is approximately \$135,000,000, of which \$10,000,000 is applicable in the British Dominions and Colonies. The annual report of the president, Frederick P. Keppel, showed that during the fiscal year 1940-41 the sum of \$2,706,834 was appropriated.

The trustees of the corporation as of Dec. 1, 1941, were: Thomas S. Arbuthnot, W. Randolph Burgess, Vannevar Bush, Nicholas Murray Butler, Samuel Harden Church, Henry James, Walter A. Jessup, Nicholas Kelley, Russell Leffingwell, Margaret Carnegie Miller, Frederick Osborn, Arthur W. Page, and Elihu Root, Jr. Officers of administration were: Walter A. Jessup, president; Robert M. Lester, secretary; and Robertson D. Ward, treasurer. Office: 522 Fifth Avenue, New York City.

Carnegie Endowment for International Peace. Founded by Andrew Carnegie in 1910 and operated as an unincorporated association until 1929 when it

was chartered under the laws of the State of New York. The endowment consists of a trust fund of \$10,000,000, "the revenue of which," in the words of the donor to his original Trustees, "is to be administered by you to hasten the abolition of international war, the foulest blot upon our civilization." The work of the Endowment is carried on in three Divisions: (1) Division of Intercourse and Education; (2) Division of International Law; (3) Division of Economics and History. For the current work of the Divisions, see YEAR BOOK for 1940.

A special library containing 65,000 volumes on all aspects of public international relations is maintained in Washington. During the fiscal year ended June 30, 1941, the Endowment's income amounted to \$573,296, which included a grant of \$100,000 from the Carnegie Corporation of New York. During this period, the Endowment expended \$549,370. The officers are: President, Nicholas Murray Butler; Vice-President, John W. Davis; Secretary, George A. Finch, Treasurer, Leon Fraser; Assistant Treasurer, Roland S. Morris. Administrative offices are at 700 Jackson Place, Washington, D.C. Divisional offices are at 405 W. 117 St., New York City.

Carnegie Foundation for the Advancement of Teaching, The. A foundation established in 1905 by Andrew Carnegie, who gave an endowment of \$10,000,000 for paying retiring allowances and widows pensions in the United States, Canada, and Newfoundland and for various other purposes in the field of higher education. Incorporated by Act of Congress in 1906, the Foundation received a further gift of \$5,000,000 from Mr. Carnegie and appropriations totaling \$13,250,000 for endowment and reserves from Carnegie Corporation of New York. On June 30, 1941, its resources amounted to \$21,056,682. In 1940-41, it disbursed \$1,929,443 for allowances and pensions. It awards no scholarships or aids of any kind. The Foundation's Annual Reports deal with many phases of higher education. In 1941 its principal studies concerned education at the graduate level. Dr. Walter A. Jessup is president, and Howard J. Savage, secretary and treasurer, with offices at 522 Fifth Avenue, New York City.

Carnegie Hero Fund. A Fund established in 1904 by Andrew Carnegie to help those who have risked their lives to an extraordinary degree to save human life or to aid dependents of rescuers who have lost their lives in the performance of their acts. The original endowment was \$5,000,000; the amount expended to Oct 31, 1941, was \$6,153,373 11. Dr. Thomas S. Arbuthnot is President and Mr. C. B. Ebersol is Assistant Secretary and Manager of the Fund, the address of which is 2307 Oliver Building, Pittsburgh, Pa.

Carnegie Institute, located in Schenley Park, Pittsburgh, Pa., founded and endowed by Andrew Carnegie in 1896, comprises the Department of Fine Arts, the Carnegie Museum, and the Carnegie Music Hall. For activities, see YEAR BOOK for 1940. See also ARTS. Thirty-six prominent citizens of Pittsburgh constitute the Board of Trustees. The officers are as follows: Samuel Harden Church, President; William Frew, Vice-President; Augustus K. Oliver, Secretary; Richard K. Mellon, Treasurer. See CHEMISTRY, PURE under *Substances*.

Carnegie Institution of Washington. An organization founded in 1902 by Andrew Carnegie "to encourage in the broadest and most liberal manner investigation, research, and discovery, and the application of knowledge to the improvement of mankind." Income on investments for the year 1941 amounted approximately to \$1,300,000. For activities, see YEAR BOOK for 1940.

W. Cameron Forbes is Chairman of the Board of Trustees of the Institution, and Vannevar Bush is President. Other Trustees are: Thomas Barbour, James F. Bell, Robert Woods Bliss, Lindsay Bradford, Frederic A. Delano, Homer L. Ferguson, Walter S. Gifford, Herbert Hoover, Walter A. Jessup, Frank B. Jewett, Alfred L. Loomis, Roswell Miller, Henry S. Morgan, Seelye G. Mudd, Stewart Paton, John J. Pershing, Elihu Root, Jr., Henry R. Shepley, Richard P. Strong, Charles P. Taft, James W. Wadsworth, Frederic C. Walcott, and Lewis H. Weed. Headquarters: Sixteenth and P Streets, N.W., Washington, D.C.

CAROLINE ISLANDS. See JAPANESE PACIFIC ISLANDS.

CASTELROSSO ISLAND. See ITALIAN AEGEAN ISLANDS.

CATHOLICS. See ROMAN CATHOLIC CHURCH.

CATTLE. See DAIRYING; LIVESTOCK; VETERINARY MEDICINE; and the countries under *Production*.

CAUSES CÉLÈBRES. See LAW; CHRONOLOGY; PRISONS.

CAYMAN ISLANDS. See under JAMAICA.

CCC. Civilian Conservation Corps (q.v.); or, sometimes, Commodity Credit Corporation.

CELEBES. See NETHERLANDS INDIES under *Area and Population*.

CELEBRATIONS. See FAIRS, EXPOSITIONS, AND CELEBRATIONS.

CENSORSHIP. See COMMUNICATIONS; DANISH LITERATURE; DUTCH AND BELGIAN LITERATURE; FRENCH LITERATURE; NEWSPAPERS AND MAGAZINES; NORWEGIAN LITERATURE; RADIO; RADIO PROGRAMS; ROMAN CATHOLIC CHURCH; TELEGRAPHY; also the article which follows.

CENSORSHIP, Office of. The Office of Censorship was established by President Roosevelt on Dec. 19, 1941, to prevent vital information from reaching the enemy throughout the War. The President ordered immediate censorship of communications by mail, cable, radio, and any other means of transmission between the United States and any foreign country.

Byron Price, Executive News Editor of the Associated Press, was appointed Director of Censorship. In announcing his selection, President Roosevelt said: "All Americans abhor censorship, just as they abhor war. But the experience of this and of all other nations has demonstrated that some degree of censorship is essential in war time, and we are at war. The important thing now is that such forms of censorship as are necessary shall be administered effectively and in harmony with the best interests of our free institutions."

In addition to the censorship of communications passing across the borders of the United States, the President asked newspapers and radio stations to "abstain voluntarily from the dissemination of detailed information of certain kinds, such as reports of the movements of vessels and troops." From both press and radio there came immediate expressions of willingness to cooperate in this voluntary program.

Censorship of mail to and from the United States was placed in immediate charge of Lt. Col. W. P. Corderman with the expectation that as many as 10,000 civilian employees might be needed for that purpose before the end of the war. Censorship of cables was put under the supervision of Capt. H. K. Fenn, U.S. Navy. John H. Sorrells, Executive Editor of the Scripps-Howard Newspapers, was appointed Assistant Director in charge of the voluntary press censorship. John H. Ryan, of Toledo, Ohio, Vice-President and General Manager of the Fort Industry Company, owners of a group of radio stations, became Assistant Director in charge of radio.

To advise the Director on policy and the coordination of censorship, the President established a Censorship Policy Board, headed by the Postmaster General and including the Vice-President and five other high Government officials. See NEWSPAPERS AND MAGAZINES

BYRON PRICE.

CENTRAL AMERICA. See BRITISH HONDURAS, COSTA RICA, GUATEMALA, HONDURAS, NICARAGUA, PANAMA, and SALVADOR, EL.

CEREALS. See AGRICULTURE; CORN, WHEAT, OATS, ETC.

CEYLON. A British self-governing colony, south of India. Area, 25,332 square miles, population (1939 estimate), 5,922,000. Vital statistics (1939): 212,112 births, 128,611 deaths, and 28,947 (exclusive of Muslim) marriages. Buddhism and Hinduism are the chief religions. Chief cities: Colombo, the capital, 310,000 inhabitants (1936), Jaffna, 47,700; Kandy, 40,100; Galle, 38,000. Education (1939). 5,733 schools and 820,160 students in attendance.

Production and Trade. The chief agricultural products (figures in metric tons) are tea (103,400 exported in 1939), rubber (90,000, 1940), copra (155,000, 1939), rice (300,000, 1938-39), coir, cinnamon, cacao, tobacco, and citronella. Livestock (1939): 1,665,282 cattle, 246,650 goats, 55,936 sheep, 35,744 swine, and 1,252 horses. Mineral production: plumbago (22,396 tons, exported, in 1939), ilmenite, and monazite. In the many small-gem quarries, sapphires, rubies, moonstones, and cat's-eyes are found. Trade (1940): Rs282,500,000 for imports (rice, cottons, coal and coke, refined sugar, and manures were the chief items); Rs387,000,000 for exports, of which coconut products accounted for Rs23,050,701 (rupee averaged \$0.3016 for 1940).

Communications. In 1939 there were 951 route miles of railway open to traffic. Shipping (1939) 11,073,522 tons entered and 10,944,819 tons cleared the ports. At the end of 1940 Ceylon had 18,660 miles of roads.

Government. Budget estimates (year ended Sept. 30, 1941): Rs117,900,000 for revenue and Rs127,364,895 for expenditure. Net public debt (Sept. 30, 1939), Rs224,151,625. The administration is headed by a governor who is assisted by a state council of 61 members (50 elected on a territorial basis, 8 nominated unofficial, and 3 officers of state). This state council, which deals with administrative as well as legislative matters, is divided into 7 executive committees in charge of various subjects, and the chairmen of these committees are ministers for the subject concerned. Governor, Sir Andrew Caldecott (appointed Jan. 19, 1937).

Maldivé Archipelago. A dependency of Ceylon Area, 115 square miles; population (1931 census), over 79,000 Moslems. Capital, Malé.

History. A rural development scheme was in operation in nine Ceylon villages which were selected as Rural Service Centers of the Dept. of Commerce and Industries. In these centers investigations were made into literacy, indebtedness, ownership of land, employment, income, number of livestock, poultry, etc., in order to furnish the information required for the work of rural development (*Crown Colonist*, Apr., 1941, p. 185; London).

An Indo-Ceylon Conference, arranged with a view to the regulation of Indian immigration and the political rights of Indians in Ceylon, failed to come to a successful solution. During August of 1941 over 1,200 men were employed on Ceylon's hydroelectric power scheme near Watawala. A dam

at Norton Bridge and a 5 $\frac{1}{2}$ -mile transmission line to Colombo were under construction (*ibid.*, Aug., 1941; p. 368-371).

CHACO. See PARAGUAY under *Area and Population*.

CHAD. See FRENCH EQUATORIAL AFRICA

CHAHAR. See CHINA under *Area and Population*.

CHAIN STORES. See TAXATION.

CHANNEL ISLANDS. See GREAT BRITAIN under *Area and Population*

CHARITIES. See PHILANTHROPY.

CHEESE. See DAIRYING.

CHEKIANG. See CHINA under *Area and Population*.

CHEMICAL WARFARE. See BOMBS.

CHEMISTRY. See articles on BIOLOGICAL CHEMISTRY; CHEMISTRY, INDUSTRIAL; CHEMISTRY, PURE.

CHEMISTRY, Industrial. This is a war report, devoted exclusively to the incredible expansion of a chemical industry meeting the demands of a nation at war.

Alcohol. Twenty million bushels of corn have been set aside by the Government for conversion into alcohol for smokeless powders. Beverage plants have been diverted to industrial alcohol.

Carbon. During the war of 1914-18, gas-mask carbon was manufactured from coconut shells. This year a million-dollar plant was erected at Fostoria, Ohio, by National Carbon, and ten million dollars was appropriated by the Government to make activated charcoal from sawdust by a new American process.

Chlorine. Production increased in 1940 to 605,000 tons contrasted with 120,000 in 1939. Chlorine in war time is required to make neoprene, ethylene glycol (prestone), ammonium picrate explosives, methacrylate plastics, antimagnetic cable insulation, medicinals, and war gases. A million cubic feet of chlorine per day, now consumed in the manufacture of tetraethyl-lead, will be made available to war-time industries from the \$2,500,000 hydrochloric acid plant of the Ethyl Gasoline Corporation, at Baton Rouge, in the spring of 1942. Two other new sources of chlorine were claimed: treatment of waste-gas nitrosyl chloride from the manufacture of nitrates, using sulfurful monochloride as catalyst, and a process by Hixon and Tenney involving reaction between sulfur trioxide and salt to give sodium sulfate and chlorine.

Explosives and Intermediates. The Government has increased appropriations to the *synthetic ammonia* plants reported in the 1940 YEAR BOOK; also it authorized an eleven million dollar plant by Dow-DPC at Freeport, Texas, near their magnesium plant. Seventy million dollars has been assigned for the manufacture of a secret explosive.

Synthetic *glycerol* prepared by the hydrogenolytic process (1938 YEAR BOOK, p. 142) is impure, and its isolation difficult. A new method, crystallization from solvents, yields glycerol of high purity. The Battelle Memorial Institute obtained glycerol from petroleum gases, without high temperature chlorination.

The production of *toluene* from petroleum by either (1) extraction from cracked gasoline or (2) cyclization of hydrocarbons, at Houston, or in the new \$13,000,000 Baytown toluene plant, or at other refineries being planned, can boost production of TNT to above 500,000 tons. Seventy per cent of our toluene is now made this way, and only 30 per cent from coal tar. The hydroforming process for toluene is discussed under fuels. The TNT plants at Joliet, Ill., and at Weldon Springs, Mo., are now in operation. Extraction using the Edeleanu process was employed, during the last war, on Rumanian

crudes, which may contain as high as 35 per cent toluene. The extraction is accomplished with liquid sulfur dioxide at -20° C. The extract contains about 60 per cent toluene, which can be mononitrated and subsequently separated from the residual hydrocarbons by distillation.

A forty-seven-million dollar smokeless-powder plant is being built by duPont in Alabama; it can utilize cut staple cotton as well as linters.

Under-water explosives proving most successful in the present war are not TNT (trityl) but a mixture of high brisance pentaerythritol tetranitrate (pentrit) or trimethylene trimtramme (hexagen) with 30–40 per cent TNT.

Fats and Oils. The Government is embarking on a farm program to produce ten billion pounds of fats and oils during 1942–43. Armour's neofat for coatings expanded an additional thirty million pounds. Deodorized fat production is above one and a half billion pounds. The soybean crop in 1941 was 111,000,000 bushels.

New processes include the hulling of cottonseed by steam explosion; hexane extraction of rolled and cooked cottonseed meats, yielding oils comparable with pressing methods, a continuous solvent extraction of soybean oil, capacity 440 tons daily, by the Hansa-Muhle process; and a Government process for extracting 99 per cent tung oil without regrinding. There is a possibility of recovering seven million pounds of wax from sugar-cane "mud": a ton of cane yields two pounds of a hard wax, M.P. 174° F., for polishes, coatings, and mold products.

Fuels. Lowry described valuable calculations for predicting the coke and by-products from blast furnaces and coke ovens. In Birmingham, England, success was reported on treating coal with coal-tar oils at their boiling points (up to 400° C.). The products were useful as binding agents in briquets, for colloidal fuels, and to modify the properties of coals and coal tar.

Petroleum production throughout the world was estimated at 2,149,000,000 barrels, of this, 63 per cent came from the United States. A commentary on the rapid pace of this industry is reflected in the fact that nearly one-third of the refining equipment in the United States is less than four years old.

Aviation fuel, 100-octane, is being produced in about twenty plants. A \$7,750,000 expansion program for 100-octane fuel was begun at Point Breeze near Philadelphia, by Atlantic Refining. Airplane ceilings, steadily being elevated, are now working on the 40,000 foot level. Di-isopropyl formal blended with aviation fuel aids vaporization at high altitudes.

The **Diesel** business doubled in 1941. In England, the admixture of up to 20 per cent high-temperature creosote Diesel fuel with gasoline for automobiles was found suitable for all but starting conditions.

Standard Oil of New Jersey announced that the **fluid cracking process** would hereafter be used in all of its New Jersey refineries. Three large plants at Bayway (Standard of New Jersey), at Baton Rouge (Standard of Louisiana), and at Baytown, Texas (Humble Oil) are built. The fluid catalyst process differs from the intermittent catalytic cracking which had to stop periodically to burn out accumulated carbon from the catalyst. In the fluid process the catalyst flows, like a liquid, to a cracking zone and then into a separate cleansing zone.

Most recent addition to petroleum catalysis is the **hydro-forming process** placed in operation at Texas City by Pan American. It reforms 7,500 barrels of 45 octane with a 80 per cent yield of 80 ASTM octane. Although it involves the use of hydrogen, the process is actually a dehydrogenation

and cyclization. The pre-heated 40–45 octane and heavy naphtha is mixed with hydrogen and sent into catalytic chambers at high pressure. The hydro-forming catalyst causes a ring closure to occur along with dehydrogenation, so that the product contains only a small quantity of aliphatic unsaturates, and is unusually stable. Either straight run or cracked gasoline may be reformed. Changing operations produces aviation fuel, or upwards of 80 per cent aromatics, it is another source of military **toluene**. The Texas City hydroforming plant could produce 5,000,000 gallons of toluene, one-quarter of the country's total 1939 toluene production. Construction was carried out by the M. W. Kellogg Company.

It was found that soybean lecithin used in 0.1 to 10 pounds per 42,000 gallons of gasoline inhibits the sludging of leaded gasoline and the corrosion of tanks during the storage. DuPont developed a metal deactivator, N,N'-disilycylidene-1,2-diaminopropane, to increase the storage stability of petroleum distillates.

Metals. The use of metal powders for bearings and gears expanded to 5,000 tons this year. Westinghouse spent two million dollars on Hipersil, an improved magnetic material for transformer cores.

Aluminum is available to Axis and Allied powers alike, but production is limited by enormous consumption of electrical energy. Most important announcement this year is the new Kalumite process which claims to produce aluminum at 11.865¢ a lb., as against the market price of 15¢ (September, 1941). Alunite, a potassium-aluminum ore, is used; there are fourteen million tons of ore available, four million in Utah where the process is to produce over two hundred tons of aluminum oxide daily. The alunite is treated with dilute sulfuric acid, to form potash alum. This is autoclaved to form a basic alum, which upon further calcining breaks into alumina and potassium sulfate. After removing the latter by leaching, the alumina is treated by the usual electrolytic process.

Aluminum production includes an additional 170,000 tons by ALCOA and 130,000 tons by other companies at Massena, N.Y. (75,000 tons), at Tacoma, Wash. (15,000 tons), and at Malvern, Ark. (80,000 tons). The latter will have special facilities for washing out the silica in the low-grade bauxite, never before considered commercially workable.

Magnesium production will swell to 200,000 tons in plants now under construction. German production in 1940 was about 20,000 tons. Magnesium will be prepared by three processes: (1) electrolysis of the molten chloride by the Dow process; (2) electrolysis by a special European process; (3) the Hansgig process. Raw material for the Dow process is (a) Midland brines (9,000 tons of magnesium); (b) MgCl₂ in potash mines at Austin, Tex. (12,000 tons); (c) Louisiana dolomites, by Mathieson Alkali (18,000 tons), and (d) Ohio dolomites and magnesites (18,000 tons). The European electrolytic process will be applied to Nevada magnesite (56,000 tons). The Hansgig process is expected to produce 33,000 tons.

This **Hansgig process**, which has aroused considerable interest because of the troubles encountered in perfecting the process abroad, got off to a bad start. Three serious explosions, resulting in casualties, occurred during its installation by the Permanente Corporation in California in the fall of 1941. The process operating in Austria for some years forces the reaction $MgO + C \rightarrow Mg + CO$ to the right in a three-phase electric oven at $2,000^{\circ}$ C. Sudden chilling to 200° with fifty times its volume

of H_2 , precipitates the Mg as a dust containing some MgO and C. Distillation *in vacuo* yields a metal powder which is collected under a hydrocarbon oil, where it is melted and cast into ingots. Improvements were made in recent plants in Germany, Wales, and Chosen. At Palo Alto, a 9,000 kilovolt-ampere furnace will have a 15,000 ton capacity, which will be expanded to 33,000 tons if successful. In place of hydrogen, natural gas will be used; this will later be passed to the adjacent Permanente cement mill as fuel. Chief difficulties are in handling the hydrogen and highly inflammable magnesium vapor; and in heat transfer problems in the vacuum distillation of the magnesium powder. A ton of metal requires 22,000 kilowatt-hours of electricity.

Despite the low content of *magnesium in sea-water*, there are 4,500,000 tons of it in each cubic mile. The Dow Company, sole producer in the United States until 1940, commenced production in 1927. The engineering problems are considerable, when it is recalled that 800 tons of sea-water must be treated for each ton of metal produced. In the process, oyster shells are calcined to give the oxide, which is dissolved to give milk of lime. The lime, as a sludge, is fed into launders where it settles through incoming sea-water, and precipitates the magnesium as hydroxide. The magnesium hydroxide slurry is caked out on vacuum filters and mixed with crude hydrochloric acid to form a magnesium chloride solution. The salt is dried in ovens 50 feet in diameter and 50 feet high. The crystals formed in the oven are fed to electrolytic cells where dehydration is completed, and during electrolysis the metal floats, is skimmed off, and poured into 24" x 4" x 4" ingot molds. A pound of magnesium requires nine kw-hr. The chlorine which is given off is blown to the hydrochloric acid plant where it reacts with natural gas to form HCl and CO. The chlorine from the magnesium cells is supplemented by chlorine from neighboring caustic soda units. The sea-water, with 80 per cent of its magnesium extracted, is sent to the bromine-from-sea-water plant.

Carlo Adamoli, of Italy has patented a method in which common magnesium ores, (talc, dolomite, magnesite) are treated with HF; the magnesium fluoride is heated with a reducing agent, which distills off magnesium. The HF is regenerated.

Electrolytic *manganese* may become a reality following successful Government operation of a 25-ton test muffled hearth type furnace at Boulder City. After roasting low-grade domestic ores, 98 per cent of the manganese can be extracted.

Points for Blackouts. There was an intensified research for new luminous paints for war-time purposes. Luminous screens for hospitals and telephone switchboards; luminous valves and switches for chemical plants; fluorescent pigments on aeroplane dials illuminated by a small argon lamp invisible to the enemy, tapes to illuminate cars; luminous clothing and hose for pedestrians; fluorescent wall-papers and plastics; fluorescent carpets for theaters; all of these are war-time uses for this material.

In 1897, Lenard paved the way for luminescent paints. Luminescence is caused by the presence of a definite coordinated group of atoms, called *phosphores*, within the crystal lattice, in much the same way that color is associated with chromophors. Foreign bodies, called *activators*, are loosely embedded in the crystal centers of the lattice; this causes distortion of the lattice and results in luminescence. The structure of these centers is not understood, although it is known that grinding the powders destroys their luminescence.

Luminescent pigments are classified according to their purity. (1) Pure luminescent pigments are salts of the rare earths, uranium salts, molybdates, tungstates, and platinum. These fluoresce (glow during excitation), but do not phosphoresce (after-glow). (2) Impure luminous paints contain traces of metallic activators added to zinc sulfide or to sulfides of the alkaline earths. Other materials used are the oxides and carbonates of the alkaline earths; halides of aluminum and of the alkaline earths; and calcium tungstate. Extreme purity is imperative: 0.000006 gram of copper in a gram of zinc sulfide causes the latter to have an intense green after-glow. On the other hand, 0.000006 g of iron in one g. of CaB_2S lumino-phore diminishes its glow to one-third.

Balmann's lumino-phore is produced by melting 0.0002 g. of B_2 with 1 g. of calcium sulfide in a flux of sodium sulfate, calcium fluoride, and sodium tetraborate at 950° C for 16 minutes. Fluorides give long after-glow but are difficult to powder since the grinding destroys the luminescence. Conditions of cooling the melt affect color and intensity of luminescence.

The principal paint *vehicle* is dammar gum; plastics, plasticized with butyl phthalate, have also been employed. Chlorinated rubber is a good vehicle for weathering paints. Oil vehicles are unsatisfactory, particularly for strontium sulfide, although zinc sulfide lumino-phores may be used with zinc naphthenate as drier and dispersing agent. Nitro-cellulose lacquers tend to gel.

The *pigment* must be dispersed without grinding. Suspending agents such as zinc or aluminum organic salts are useful, e.g. zinc naphthenate has been used up to 8 per cent. The pH must be kept well above seven since weathering moves it into the acid zone where the alkaline earths tend to react with the acid vehicle. Accordingly, borate and phosphate buffers are often added. A priming coat of lacquers, or nonchalking titanium dioxide paint, is used, but a top coat is unfavorable, since it confines sulfur compounds released from the lumino-phore.

Due to the high purity required, costs of typical grades are \$2 an ounce.

Phosphorus. A fourth electric furnace is planned at Monsanto, Tenn., and a new phosphate plant, at Trenton, Michigan. International Minerals and Chemicals Corporation is building phosphate rock plants in Florida and in Tennessee.

Plastics. More than 123,000 tons of plastics in 1941 indicates the rapid expansion of this industry. Three-quarters of all the plastics duPont produces came from its laboratories in the past four years.

Plant expansions included a Plexiglas sheet plant, by Rohm and Haas on the west coast; a \$400,000 expansion to 10,000 tons capacity of the Durex plant at North Tonawanda, N.Y.; the first exclusively cellophane film plant west of the Mississippi, in Iowa; Hercules entering the plastics field with the purchase of the John D. Lewis phenolic gum and alkyl resin plant at Taunton, Mass; a million dollar synthetic phenol plant by General Electric at Pittsfield being planned, and a new phenol-formaldehyde Monsanto Resinox Plant at Springfield, Mass. The most exciting new plastic news is that production will shortly begin on Cafelite, the plastic from coffee, at Sao Paulo, Brazil. The plant is equipped to handle 5,000,000 bags of coffee. Another plastic is being made from cottonseed hulls by Leahy at the University of Tennessee; southern spinning mills are already using 350,000 sheaves made of this highly elastic plastic.

Elastometers such as Vinylite became increasingly important. Urea-melamine plastics appeared as insulators of heat and sound. Uses for the methacrylates continued to expand: portable fluorescent lights, molded electric plugs, transparent pumps for acids, safetyguards for coilwinding machines; seventy applications in automobiles, including 500,000 protective reflectors on automobiles in California. War-time uses include plastic bomber noses of laminated mahogany or methacrylate, radios, nonterrifying gas masks, ventilators, aileron pulleys, instrument panels, knobs, self-sealing gas tanks, the bodies of bomb fuses, mortar tail-fins, and incendiaries made of cellulose nitrates containing phosphorus. The British spray cellulose acetate over glass to keep parts from flying during an air-raid. Methacrylic resins are used for navigators hatches, gun-turrets, plastic girders, airplane dope coatings, and coatings to prevent sea-water corrosion of planes in the tropics. Polished styrene glasses are being pressed for servicemen. Henry Ford completed the first all-plastic automobile in August. Still only in the experimental stage, it weighs two thousand pounds compared with three thousand pounds for steel.

Improved techniques appeared for injection molding of low temperature thermosetting plastics.

Investigations of plastics by Baker at the Bell Telephone Laboratories showed that rapid cooling gives a disorderly state, making the plastic soft and flexible; whereas slow cooling gives parallel fibers making it hard, but brittle. The plastics in the future may be tempered, like steel, to impart the desired properties from proper orientation of the fibers.

Plastic Ion-exchangers. Meyers of the Resinous Products Company described the use of Amberlite resins as ion-exchangers. They may be used in softening water; for partial or complete removal of salts from water, and from biological media; for the recovery of traces of copper, gold, and other metals from dilute solutions; and for removing iron and objectionable acids from industrial waters. Unlike the zeolite process, the resinous ion-exchangers may be used in strongly acidic or basic solutions, and in hot solutions. They can produce high quality water comparing favorably with distilled water. Kyrta, an active resin suspended in diatomaceous earth, appeared for purifying sugar.

Plastic Wearing Apparel. Celluloid shirt collars made their appearance in 1868; and in 1890 Spitteler discovered casein for making buttons and buckles. Next came Bakelite. Today there are four major types of plastics used in wearing apparel. (1) Thermosetting plastics include casein, molded and cast phenolics, and urea-formaldehyde. These are for buttons, costume jewelry, and transparent and colored shoe-heels. (2) Rigid thermoplastics are featured in color, such as cellulose esters, methacrylates, polystyrene, vinyl compounds, and rubber hydrochloride. These include cellulose acetate necklaces and bracelets, cellulose acetobutyrate football helmets, and polymerized methacrylate and styrene for crystal-clear jewelry, brush handles, and so forth. (3) Flexible thermoplastics, colorful and elastic are of greatest importance in apparel. This includes regenerated cellulose in raincoats; rubber hydrochloride in raincoats and bags; vinylidene chloride extruded for belts, suspenders, and hats; and polyvinyl ester resins for fabrics. (4) Synthetic fibers include synthetic wool, lanital, or aroclac from casein; soybean fiber as an aldehyde condensation; vinyon, and nylon. Vinyon ester plastics are flexible for water-proofing. They consist of copolymers of vinyl acetate and chloride in the proportions 1:8 by

weight. Vinyl polymers with molecular weight of about 15,000 become semi-rigid; they are suitable for packagings and stiff-front shirts. Molecular weight polymers of 22,000 are flexible and resilient, and the fabrics made from them can be cut and sewed like any textile; also they can be heat-sealed. It is used for making transparent slippers, water-proof aprons, trimmings for handbags, suspenders, shoes with a permanent shine, shower curtains, and so forth. Vinyon fibers and yarn extruded from an acetone solution are being made into ladies hose and bathing suits.

Refractories from Sea-water. Refractories from Pennsylvania dolomites are being manufactured by a new plant at Cape May Point, New Jersey; capacity 40,000 tons. The Chesny process which made England self-sufficient in magnesite refractories, is employed. By this reaction, dolomite limes are replaced by the magnesium in sea-water. The difficulty encountered is to produce crystalline, readily filterable magnesium hydroxide.

Rubber. By the close of the year, the synthetic rubber production was greatly stimulated through the acquisition, by Japan, of approximately one-third of the Far East rubber supply. Production of neoprene, butadiene, and polysulfide rubbers have been as follows: in 1939, 1,750, none, and 500 tons respectively; in 1941, 9,000, 4,000, and 1,400 tons; in 1942, estimated, 20,000, 80,000, and 6,000 tons respectively.

Six American companies are in production of copolymers of butadiene with styrene or acrylic acid derivatives. New plants include a 5,000-ton Shell Oil Plant at Houston; a DPC-Carbon and Carbide \$3,500,000 plant at Charleston, W.Va.; a \$2,200,000 Monsanto Plant at Galveston, Texas; four plants of \$1,250,000 each, capable of expansion to 30,000 tons a year at Goodyear, Goodrich, and Firestone at Akron, and U.S. Rubber at Naugatuck, Conn.; a \$15,000,000 Standard Oil plant at Baton Rouge; and a plant to produce Ameripol at Baton Rouge. The government intends to expand synthetic rubber capacity to 400,000 tons, with an appropriation of nearly half a billion dollars.

Ameripol is a typical butadiene rubber: like natural rubber in hardness, workability, elongation resistance to acids and alkalis, resistance to benzene and carbon tetrachloride, although swelling in acetone; better than natural rubber in resistance to oxidation by driers and to abrasion in the presence of oils, resistant to heat and to aging; but not as satisfactory as natural rubber as regards elasticity, tear resistance, and stiffening in sub-freezing weather. Ameripol production expanded to 18 tons a day.

The Government approved a \$25,000,000 project to plant guayule, a natural shrub containing 23 per cent rubber, in the southwest.

A million pounds of *neoprene* was allocated to 250 companies. A 10,000-ton neoprene plant at Louisville for military heavy-duty neoprene-tread tires will shortly be completed, as the Deepwater facilities will rise 9,000 tons. Hercules is expanding its Parlin chlorinated-rubber for tents, tarpaulins, flamed-proofed military fabrics and insulation. Neoprene is used in flexible bearings, gaskets, sealing tape for gasketing marine seams, Par-grip boots, hot-water washers, etc. Because of its gas-retaining and sunlight-resisting properties it has completely replaced rubber-balloon fabrics. Neoprene FR was announced as resistant to oil and sub-zero temperatures, down to 70° below zero; this is a property not possessed by other synthetic rubbers.

Thiokol, first manufactured in 1930, boosted output to 3,000 tons at Midland, Mich.; and double this is planned for 1942.

Miscellaneous rubber news includes the use of chlorinated rubber as paint film, rubber hydrochloride films for food packages and raincoats; Koroseal anodes for hydrogen peroxide manufacture; rubber electrodepositions for tread to army tanks and supports, latex-foamed mattresses for air-raided shelters; a rubber compound by Firestone which eliminates cracking of tread and side walls; an injection molding machine for rubber articles which vulcanize only after injection into the die, and powders for inner tubes to cut auto static from 7,000 volts to below 1,200 volts. Acetylene black used in place of carbon black increases the conductivity of rubber a million times and discharges static, such rubber is suitable for aviation suits to keep pilots warm at high altitudes by passing electricity through the suit. (See also RUBBER.)

Strategic Materials. In the Pacific the United States has much strategic material at stake. Tin came from Singapore and the Netherlands Indies. Manganese from Brazil, Cuba, and South Africa will have to be stepped up. Two-thirds of the chromium supply came from the Philippine Islands and New Caledonia; Africa, Turkey, and Cuba will have to be called in. The closing of the Burma Road will cut off our tungsten supply; South America is now increasing its output, and domestic molybdenum can partly be substituted. From Madagascar and Ceylon come high-grade graphite. It can be replaced, however, by deposits in Alabama, Texas, and Pennsylvania. Ninety per cent of our mica comes from India, and the splitting of it requires trained labor. It will be a herculean task to find a substitute for Manila fibers. Ninety-eight per cent of our rubber supply, 600,000 tons, came from the Orient. Reclaiming, which normally accounts for 30 per cent of our yearly supply, will have to be stepped up, as will also the cultivation of natural rubber plants and synthetic production. Palm oil comes from the Indies for tin plating, tanning agents from the Far East. These and many more of our chemical materials will be cut off, and substitutes for them must be provided. The Bureau of Mines (q.v.) in 1941 carried out a careful exploration for strategic materials.

Textiles. Self antiseptic clothing, described by James of the University of Maryland, has been used in all-leather hat bands, 15,000,000 mattresses, 2,000,000 pairs of canvas shoes, and 4,000,000,000 sheets and pillow cases.

Fire retardants for textiles, using ammonium sulfamates, will be expanded by the sulfamic acid plant commenced in May, 1941, by the duPont Company at Grasselli, N.J. Sulfamic acid was a laboratory curiosity until three years ago when duPont began tonnage production. It is also a tanning and dyestuff intermediate.

Latex by the U.S. Rubber Company has been used in its new Kolok process for riveting fibers together without decreasing their flexibility. Several million ladies silk hosiery have already been treated. The process, which adds as much as 18 per cent latex to the fabric, doubles the life of the hosiery.

Nylon, a laboratory curiosity in 1938, today nurtures a full-scale industry employing several thousand workers. Nylon is a generic name which refers not only to textile fibers but also to a large group of chemicals. For instance, nylon monofil is used in brush bristles, racket strings and fishing leaders, for insulation on wire, for molding powders for self lubricating bearings, and for leather-like materials. No limit to its versatility is yet in sight. The basic materials for nylon are manufactured at Belle, W.Va. Yarn and nylon flake are produced at Seaford, Del., and Martinsville, Va. The latter be-

gan production in November and will be in full operation by the summer of 1942. Nylon monofil is produced at Arlington, N.J. Nylon capacity will have expanded 25 per cent to 10,000 tons by the end of 1942. In addition to hosiery, 400 mills use nylon yarn for purposes ranging from wrist-watch straps to parachutes. A parachute consumes 75 square yards of nylon or silk. Nylon magnetic wire insulation reduces the size of motors 15 per cent. Nylon and rayon is being substituted for the special silk paper for money and Government bonds.

More than 70,000,000 yards of *proxilin-coated* textiles are produced annually in this country. In London, to replace glass windows smashed during air raids, cotton mesh is drawn through a cellulose acetate solution containing 20-30 per cent plasticizer.

Rayon is being standardized by the British textile industry. The United States Government exhibited moderately sheer mesh cotton stockings. During the war, manufacturers will be knitting rayon and cotton into tops and feet of nylon hosiery to affect a saving of the latter.

Saran, a thermoplastic made by Firestone from Dow materials, was exhibited in the fall of 1941. It may be extruded in strands woven like cloth in any weave or color, chiefly for upholstery but also for table tops, airplane partitions, and room interiors. It is water-proof, chemically resistant, and resembles rattan or reed. It does not crack or split.

A British firm is making a textile fabric from *sea-weed*. Formerly 400,000 tons of sea-weed each year was gathered in the Hebrides, and it abounds on the west coasts of Ireland and Scotland. Non-metallic alginates made from the alginate acid in the sea-weed can be extruded as in the viscose process. The fiber is nonflammable, if soaked in gasoline and the gasoline burned away, the fabric is unaltered. It has high luster, good strength, and dyes well, but large scale production is not yet perfected.

Ford described a *soy protein fiber* sprayed with rubber for automobile upholstery padding. A panel of the resin-impregnated fiber weighs half that of steel and does not dent.

Vinyl impregnations of fabric, as in the latex process, have been applied in aqueous dispersions up to 50 per cent for oil-resisting artificial leather, automobile hoods, and bookcloth.

Artificial *wool* from milk has reached the United States (1938 YEAR BOOK). Marvlo, a milk casein fabric woven from Aralac fiber was exhibited in October. A million pounds of Aralac has been used to replace rabbit's hair in the hat industry. The fiber blends with rayon and wool, and dresses of it will appear in the spring of 1942, according to the National Dairy Products Corporation which has a factory operating at Taftsville, Conn., with a 5,000,000-pound production capacity. Aralac is more expensive than rayon and cotton, but less expensive than wool.

Wool consists of long fibrous molecules linked occasionally by cysteine S-S linkages. If these linkages are broken by reduction and alkylation with alkyl monohalides, its solubility in alkalies is much higher. Upon replacing the S-S cross-linkages with alkyl groups by reduction followed by alkalation of dihalides, the solubility in alkalies is considerably reduced. This process offers great promise in improving the properties of wool.

The use of molecular models has become an instrument of research. Hirschfelder-Fischer atomic models, united with ordinary dress snap-fasteners were used by Taylor and Becker to construct models of long fibers. Models of alpha-keratin, the natural wool protein, is of a folded molecule; this may

be set in the stretched beta-keratin form by steaming. This is the process involved in the "permanent wave" and the "trousers crease", as is common observation, this gradually reverts to its normal folded alpha-keratin structure. Muscle fiber, or myosin, is capable of similar extension and contraction. By construction of other models Taylor and Rosenblum were able to predict the covering power of certain detergents.

Fuoss of the General Electric predicts that the high polymer plastics and textiles of the future will be designed with predetermined electrical and mechanical properties, just as the metallurgist now designs specific alloys. The motion of the molecules under an applied electrical field can be controlled by altering the size and length of the side-chains along the long fiber molecule. Plasticizers or heat reduce the resistance of the molecules to motion.

Clark in England reported treating linen gill net twine with chlorinated pale crepe rubber. Also, the British Government issued instructions for rot-proofing various textiles and for increasing their resistance to fire, water, and mildew.

X-Rays in Defense. There is an interesting tabulation of the uses of X-ray analysis in English defense industries in the News Edition, *Industrial and Engineering Chemistry*, page 1150.

Africa exported 904,942 pounds of pyrethrum for insect sprays to the United States. French West Africa is using native phosphate rock as fertilizer. Tanganyika and Nyasaland will establish tung-oil stations.

The **Argentine** Chemical Society, membership 950, held its fifth meeting this year. New plants were started to manufacture precipitated chalk, acetic acid, tartaric acid, caustic soda, carbon disulfide, copper sulfate, zinc, and hydrogen peroxide by the electrolysis of ammonium sulfate.

Brazilian chemical industry is rapidly expanding. linseed oil, cellulose, and steel in Rio Grande do Sul, ethanol, dry ice, perfumes, cosmetics, matches, natural asphalt, and soap in Sao Paulo, macauba oil, aluminum, and cement in Minas Gerais; coconut oil in Bia; rubber and timbo insecticide powder (1,200,000 pounds in 1941) in Para; and cellulose industries in Santa Catarina. The Klabin and Imaos Company which already controls the production of nitric and sulfuric acid, ceramics, cardboard, and rayon, is constructing a \$5,000,000 plant to produce 70 per cent of Brazil's pulp needs from native pine. The Government is sponsoring the blending of 15-20 per cent ethanol in motor fuels, a \$5,000,000 Solvay plant, and development of the aluminum, iron, manganese, tungsten, and nickel deposits. Statistics for the 23,437,674 pounds of oil exports are given in the Dec. 10, 1941, News Edition of *Industrial and Engineering Chemistry*. Oticica oil is regarded as the latest of Brazil's important export products. Cottonseed production in 1940 was 60 per cent of world production. For the important coffee plastic, see above under *Plastics*.

British Isles Hundreds of firms registered under the Essential Works Order to unify the chemical war effort. The dyestuffs industry is well situated. The essential drugs have been formulated. New symbols for use on diagrams of chemical plants were publicized by the British Standards Institution. Unification of the plastics industry has not yet been enforced. Substances formerly obtained from the continent but now supplied domestically or from the United States include pyrites, phosphates, calcium carbide, and potash. Scarce items include chlorates, dichromates, yellow prussiate, and potassium compounds. Coal tar derivatives and salts for alkali products have always been plentiful.

The **Canadian** chemical industry has expanded to meet war needs. By August, Government appropriations of \$120,000,000 had placed in production 23 war-time chemical plants employing 11,000 workers and producing 12 war-time chemicals and 8 explosives. New war-time industries are manufacturing optical glass, toluene, xylene and other light oils in Nova Scotia, carbon disulfide for rayon and cellophane in Ontario, zinc chloride, cerium at Shawinigan Falls, sulfuric acid from pyrites in Quebec, ammonium chloride and sodium sulfite in Hamilton, and nylon from intermediates. Canada still depends on the United States for formaldehyde (2,351,000 pounds, in 1940), for ethylene glycol for explosives and antifreeze, and for dyestuffs; also, \$100,000 each of acetone and glycerol for explosives since the beginning of the war. Sixteen new plants manufactured crude cod liver oil in the marine provinces where five refining plants produced 266,427 imperial gallons in 1940. Previously, Canada had imported 80 per cent of its 300,000 gallon oil requirement.

Central America is now buying from the United States. Cuban ore shipments doubled in value to \$4,325,582 for the first half of 1941; of this, manganese ore doubled to \$2,801,133. Imports in 1940 included \$11,600 in dyes to Costa Rica; \$20,000 in insecticides and boiler compounds, for sugar centrals, to the Dominican Republic, \$23,468 in explosives to Guatemala, also hydrochloric acid as a banana-wash, and \$90,000 in toilet preparations to the Honduras and \$305,000 to Panama. Mexico has agreed not to ship strategic war materials outside of the western hemisphere. New plants in Central America include perfumes in Panama, sodium and magnesium compounds, pharmaceuticals, and bone-fertilizer in Mexico, molasses fermentation products in Jamaica, sulfur in Costa Rica, and a rubber fabrication plant in Guatemala.

Chile reported a number of government sponsored plants, coke ovens, a glass factory in the south, nickel and chromium plating, development of iron ore deposits and an electric furnace plant at Mariposa, iron mines at Primvne of Coule, a sulfur mine (3,600 tons yearly) in Arica, zinc oxide from imported ores, a button factory, a fruit-drying plant because of the lack of tin, several projects for aluminum from aluminum sulfate in North Chile, and potassium nitrate and sulfate plants, near Pinta-dos. A forty million Chilean dollar loan provides water power at Huilo-Huilo for a special rotating steel furnace, 86 per cent of the iron is imported. Fertilizers are plentiful, excepting potash, a plant at Tarapaca is to produce 30,000 tons yearly. A joint Chilean combine purchased fifteen million pesos worth of pharmaceuticals this year from the United States. To offset the huge quantities of copper, iodine (622 tons in 1940), and nitrates shipped each year to the United States, Chile passed a law requiring an importation of 20 per cent of the value of the exports.

North **China** has only an alkali products industry; Central China, controlled by Japanese, is supplying ammonium sulfate fertilizer, Shanghai and elsewhere have over 30 biological laboratories; and at Hong Kong alkali and hydrochloric acid factories were started.

Danish plans call for a combined new gas works and nitrogen plant in Northern Jutland to furnish calcium nitrate fertilizer.

Eire was unable to secure superphosphates from North America, and pyrites from Spain, for fertilizers. Production of industrial alcohol is only one-tenth normal as a growing use of potatoes for food and fodder has closed four of the five Irish plants.

Germany now regulates the Alsatian potash mines. Iodine restrictions were removed in December, 1940, so apparently an adequate supply is again available. Germany's new order would make Continental Europe chemically self-sufficient, and regulated by syndicates. Electric current would be located in Scandinavia to provide fertilizers for France, Spain, and the Balkans. France would produce aluminum from its bauxite deposits. Spain would supply pyrites. Yugoslavia would develop an electrochemical industry based on water power. Switzerland would retain its chemical industry, and supply water power. Rumania would develop petroleum by-products. Italy would contribute mercury, sulfur, electrochemicals, and inorganic and organic industries.

Hungary has substituted sunflower oil for imported cocoa butter, and sheep tallow for imported fats, in therapeutics. The Magyarovar viscose factory has enlarged to 40,000 tons of hose annually; a second textile mill is planned. Bauxite output was up five-fold above 1938.

India expanded its chemical industry to meet shrinkage of imports. New plants include: two in Kathiawar to manufacture alkali and chlorine products, imported formerly from Japan and now from Great Britain; half a dozen paper plants; two sulfuric acid plants, in Potlad and Baroda, capacity 1½ tons of sulfur per day respectively; formaldehyde to replace a 50 ton annual import; a 180 ton ammonium chlorate, and a 3,600 ton glacial acetic acid plant. A new 600 ton capacity chromate plant at Mysore will supply dyeing and tanning industries. Chemical and drug production has accelerated. Increases were also recorded in sulfuric acid, ammonium sulfate, and aviation gasoline from India and Burman crudes. Iron production was up to 1,835,000 tons in 1940.

The normal five-billion pound jute crop was cut to one-third, although India shipped a billion sand bags and three million yards of jute to Great Britain for tarpaulins and canvas. Jute rayon clothing was in all probability being used in the French and German armies.

Italy installed new plants for recovering phenol from ammonia waters of coke ovens, for distilling coal tar, for compressing methane, and for producing methanol, by Vetrocoke's; more potassium derivatives and alumina from Rome leucites, the enlarging of the sodium chloride plant, and a new electrolytic alkali and chlorine plant at Torre Viscosa; a new calcium carbide factory, 600,000 quintal capacity; a coke factory by the new Cokapuania Company with a connecting nitrogen factory having a capacity of a million quintals of fertilizer; plants to produce 7,000 tons of oil from bituminous shale, by the Societa Friulana; a magnesium industry at Bolzano, developed in the past two years. Anticipated exhaustion of the Istria and Pugli bauxites has led to consideration of leucite from Naples and alumite from Rome. The oxide is extracted at Venice, electrolyzed in Mori and Bolzano and fabricated elsewhere. Lead chambers in 146 companies in 1939 produced two million tons of sulfuric acid; and some 33 contact plants produced 500,000 tons.

Japan published sketchy news. As the Manchukuo five-year plan came to an end, electric power consumption rose from 28,000,000 kilowatt-hours in 1933 to 500,000,000 kw-hrs, 1940. Ammonium sulfate rose from 29,000 tons in 1933 to 548,000 tons in 1941. Japan has apparently not yet exploited the vast Manchurian timber resources for rayon and paper pulp. Coal shortage was the greatest deterrent to chemical progress. Fertilizer production

was insufficient, with ammonium sulfate production 30 per cent below 1936-37. The Mitsui Chemical Company will use the Fischer-Tropsch process for gasoline from coal; and gasoline blended with power alcohol or ether was available. A new plant at Asahigawa will boost benzene output. Magnesium ore from Tashichiao, one of the largest deposits in the world, is chlorinated, and the magnesium recovered by electrolysis; commercial production began in 1936. Expansion of the pyrite mines kept sulfuric acid high; the ratio of lead chamber to vanadium catalyst plants was 7:3, although the chamber process is declining. All carbon disulfide plants are probably close, to make sulfur available for war industries. Silk piling was a major problem upon which two million families depended. Japan's meager dyestuffs industry was undoubtedly halted by war efforts. Vast as her domination of the textile field has been, most of the chemical industries in Japan are still in their infancy; and an enormous production program, such as is planned in the United States, cannot be achieved by Japan.

Netherlands Indies plans 45,000 tons of ammonium sulfate fertilizer from petroleum gases by the end of 1942; soap and volcanic sulfur industries are also being encouraged.

New Zealand is to make silicosuperphosphate fertilizer from serpentine, 100,000 tons a year. A low temperature carbonization plant at Rotowaro treated 413,845 gal. of tar and oil

Palestine doubled its potash and bromine production in 1941; and many pharmaceuticals and pure chemicals are manufactured within the country. Ninety thousand citrus fruit wrapped in diphenyl impregnated paper (YEAR BOOK, 1939, p. 128) showed a spoilage loss of 0.37 per cent compared with 9.6 per cent for unwrapped fruit.

Peru has a potential fish-oil vitamin industry, according to a U.S. Government survey. Domestic production of sulfuric acid cut imports. Mussala, a Chilean firm, is manufacturing pure chemicals and copper insecticides for agriculture

Spain was able to export only one-quarter its peace-time quota of pyrites. Production in the first half of 1941 was 239,211 tons, most of which was sent to England; in return, Spain received 500 tons of soap. Cyanamid replaced ammonium sulfate in the Spanish rice region. Prohibition on United States serums and vaccines remained.

Swedish chemical industry continued to grow at a rapid pace: acetone for smokeless powder, dyestuffs, medicinals; a new cyanamid plant at Stockvik, capacity 40,000 tons; tanning materials; a 20,000 ton sulfuric acid plant to increase facilities for fermenting wood pulp to power alcohol; methanol and acetic acid in a new charcoal plant in northern Sweden; five new sulfite-alcohol plants with a 4,500,000 gal. capacity of 95 per cent alcohol, to supplement the 1,830,000 gal. capacity of present expanded plants.

Switzerland rationed its soap production, with Russian fats and oils curtailed.

Thailand projected plants for wood distillation, explosives, hydroelectric power, and the electrolysis of brine.

In **Venezuela** a National Price Board, formed in December, 1941, controls alkalies, alcohol, calcium carbide, dyes, insecticides, medicinals, and fertilizers. Coal tar and medicinal imports have increased five-fold from the United States as European markets were closed.

See AGRICULTURE, U.S. DEPARTMENT OF under *Agricultural Chemistry*; PHOTOGRAPHY; articles on products, as BOMBS, RUBBER.

HUBERT N. ALYEA.

CHEMISTRY, Pure. Defense research by our scientific leaders remains a military secret; and for this reason the report on pure chemistry is curtailed and the section on wartime industrial chemistry expanded.

Apparatus. Industry is providing the chemist with analytical machines complex in construction but simple to operate. The RCA electron microscope was announced in the 1940 YEAR BOOK, (p. 117). This year a polarograph, or dropping mercury electrode, for qualitative and quantitative analysis of solutions, which Heyrovsky developed over the past decade, has been marketed by Leeds and Northrup, and by the American Instrument Company. It costs about \$1,000. Hipple of Westinghouse exhibited, at the Chemical Exposition in December, 1941, a mobile mass spectrograph costing several thousand dollars. In this machine the components of a sample of petroleum gas, for instance, can be separated according to their weights, or masses, with accuracies up to 1 part in 100,000.

Kapitza, in Moscow, has described a new liquid air apparatus which operates at 5 atmospheres pressure instead of the 200 atmospheres required by the Linde machine. Greater efficiency in dissipating energy is achieved by having the expanding gas drive a turbine. Low-temperature fractionation of petroleum hydrocarbons and blast furnace gases in the Kapitza machine was rumored.

Archeology. Documents charred, such as by incendiary bombings, can be deciphered, according to Taylor and Walls, by alternate treatment and drying with solutions of 25 per cent chloral hydrate in alcohol, and finally a similar solution containing, in addition, 10 per cent glycerine. A mass of chloral hydrate crystals appears on the surface and may be photographed.

Astronomy. Lyttleton and Hoyle postulated that the stars sweep up hydrogen and its compounds from interstellar space; this provides them with enormous stellar energy, resulting from the transmutation of hydrogen to helium (1939 YEAR BOOK, p. 122).

An outstanding problem in astronomical spectroscopy may be solved. Edlen has identified many of the forbidden lines in the sun's corona as due to highly ionized iron, calcium, and nickel, corresponding to meteoritic materials. The theory associates the prominent green line with Fe^{+13} , and postulates ionization potentials of 400 volts. Such large potentials could be achieved only if the corona were millions of degrees hot. Menzel assumes these high temperatures exist near the surface, in accordance with Edlen's theory; and he believes that the sudden expansion in gases emerging from the sun produces rapid cooling and a fall of temperature to the 10,000° usually accepted for the sun's surface.

Wildt, who previously showed that Jupiter and Saturn are surrounded by clouds of ammonia, with some methane, postulated clouds of solidified formaldehyde, or polyoxymethylene, around Venus. It was apparently photosynthesized from carbon dioxide and water vapor.

King is thought to have discovered thulium in the sun's atmosphere.

Awards. The American Institute awarded its Medal to W. M. Stanley "for crystallizing the virus of tobacco mosaic." L. F. Fieser was the first American to win the \$1,000 Judd Cancer award. Two brothers will receive the 1942 Chandler Medal for work on vitamin B₁₂ (R. R. Williams) and on pantothenic acid and the vitamin B complex (R. J. Williams). The latter is also the 1941 recipient of the Mead Johnson and Company \$1,000 vitamin B complex award. Chemical and Metallurgical Engineering awarded its annual medal to the Dow

Chemical Company for its plant to recover magnesium from seawater. The Davy Medal was awarded to H. D. Dakin for biochemical and metabolism studies. The 1941 Eli Lilly Company Award in Biological Chemistry went to D. Rittenberg for his study of isotopes as tracers. Fritz Hofman has received the Goethe Medal in recognition of his research on synthetic rubber. The Nichols Medalist for 1942 will be D. A. MacInnes, in recognition of his work on electrolytes. Harlow Shapley received the Pius XI Medal in Astronomy, one of the most distinguished of scientific honors. The Perkin medal was presented to Thomas Midgley, discoverer of tetra-ethyl lead anti-knock, and of Freon refrigerant. The Rumford Medal went to V. K. Zworykin for his researches upon photocells, television, and the electron microscope.

Cyclotron. Research at the University of California continued under Lawrence. There are now about forty cyclotrons in existence, twenty-four of them having been built by scientists trained in his laboratory. He has attained 96 MEV carbon particles, and anticipates six-fold better results with the giant 3,700-ton cyclotron now under construction.

Medical research with the cyclotrons at California now include neutrons for cancer—61 out of 129 patients saved from certain death; radio-phosphorus—now being shipped to Peru—for blood diseases; radio-iodine for tumors and enlarged thyroid glands, and radio-strontium, more accessible than radio-calcium, for bone-cancer.

In plant studies radio-rubidium has proved more useful than radio-potassium since half-lives of 19 days and 12 hours respectively make the former more generally useful. Radio-carbon was produced in relatively large quantities early this year. Formaldehyde is supposed to be the intermediate product in photosynthesis, but assimilation of radio-carbon in the plant produced not formaldehyde but a yet unidentified compound as the true intermediate.

For other sub-atomic research, and a description of the Kerst betatron see PHYSICS.

Electron Microscope (see also PHYSICS). American Cyanamid showed that, contrary to belief, precipitated chalk and magnesium oxide, used as pigments in paper, are crystalline; and that these substances, and also zinc oxide and alumina smoke, were useful as particle size standards for micrograph studies.

Extensive use of this instrument in many fields may be expected: in the investigation of dusts and smokes, of photographic grains for improving films, of synthetic and natural fibers, of evaporated metal films—Zworykin reports a new technique for obtaining micrographs of the surface of metals without preparing transparent specimens, and of sub-microscopic biological materials. Micrographs of the influenza germ were obtained.

Unfortunately the specimens used in the electron microscope must be resistant to vacuum and to the heat generated by the electron beam. These criteria eliminate many organic crystals, and some biological materials.

Houston and Bradner reported a two-stage magnetic lens electron microscope with increased resolving power.

Isotopes. Improved methods for the thermal diffusion method (1938 YEAR BOOK, p. 135) for separating isotopes were reported. Watson applied it effectively for slightly increasing the heavy-carbon content of methane, for biological studies. Brewer patented a column provided with baffles properly spaced to induce advantageous convection currents.

Monomolecular Films. Langmuir has extended his film technique of detecting viruses. On the slide (a)

47 layers of barium stearate are built up, followed by (b) thorium nitrate (c) a specific reagent and (d) the toxin, virus, or poison to be detected. If the suspected substance is present, the layers will change the intensity of sodium light under which the film is examined.

A number of anti-glare glasses have been patented. In the General Electric Company glass is coated, by evaporation *in vacuo*, with a $\frac{1}{300,000}$ inch layer of magnesium fluoride. The RCA laboratories etch with 0.5 per cent HF solution, which produces a calcium fluoride layer, and increases the transmissivity of the window glass to 99 per cent. The film withstands moderate heat and washing with water and alcohol. Land has produced a new Polaroid, known as Type H, from polyvinyl alcohol. The plastic is extended to align the fibers, and then exposed to an iodine solution. The resultant sheet is three times more transparent than the earlier polarizing sheets.

Harkins reports the anomalous behavior of monomolecular layers of three higher alcohols, which, while freezing from the liquid state, decreased in viscosity just before solidifying.

Substances. Mayer at Columbia demonstrated mathematically the probability of a second rare earth group of elements beyond Uranium.

The Carnegie Institution Geophysical Laboratory has been simulating conditions within the earth by fusing silicates under steam in an electric furnace at several hundred atmospheres pressure. Deposition of minerals from the vapor state formed large crystals of sillimanite and of clear quartz.

Hassis and McCready have accomplished the first synthesis of starch from glucose. Glucose was combined with phosphoric acid to form phosphorylated glucose; this was decomposed by the enzyme phosphorylase into phosphoric acid and starch.

Research Institute. Researches for 1940-41 at the Mellon Institute and at the Armour Research Foundation are reported in *The Journal of Industrial and Engineering Chemistry*, News Edition, Volume 19, on pages 391 and 1,465 respectively.

The Armour Research Foundation, now in its fifth year, placed 16 new laboratories in service. Research was continued on industrial problems and on seven fundamental researches including diffraction, high-pressure, and high-speed studies.

Research for Defense. The National Defense Research Council (NDRC) created by presidential order in June, 1940, spent \$10,000,000 in 1941 on defense research, directed by James Conant. About a hundred scientists in universities and seven hundred in industrial laboratories were placed on defense projects. One hundred and fifty physicists were transplanted to the MIT radiation laboratory for a highly confidential research project.

Government control of chemical industry was put under the direction of E. R. Weidlein of the Mellon Institute with three assistants for production, industrial relations, and priorities. Experts under him control (1) coal-tar, (2) cotton and oils, (3) solvents and plastics, (4) explosives and nitrogen, (5) inorganic chemicals, and (6) petroleum.

See ASTRONOMY; PHYSICS.

HUBERT N. ALYEA.

CHEMOTHERAPY. See MEDICINE AND SURGERY.

CHESS. With international chess pretty much on the sidelines, all activity in 1941 was concentrated in domestic circles, wherein Samuel Reshevsky of New York retained his title against a challenge by Israel Horowitz. Reshevsky later competed in the New York State championship at Colgate University, and

there Reuben Fine took honors. The match between Fine and Reshevsky was drawn. Fine then successfully defended his open championship of the United States Federation at St. Louis, where Herman Steiner of Los Angeles was runner-up. The lone failure chalked against Fine was a loss to Albert Pinkus, Manhattan Chess Club champion, in the deciding match of the Metropolitan Chess League, which was topped by the Marshall Chess Club.

Except for the Soviet championship, regained by Mikhail Botvinnik of Moscow, there was not much play outside of the United States. Gideon Stahlberg of Sweden won the international competition in Argentina, with Moische Najdorf of Poland second. Dr. Alexander Alekhine, world's champion, is living in Lisbon.

In college circles, Yale repeated in the H.Y.P.D. Chess League and Brooklyn College repeated in the Eastern League. Among the women, Miss N. May Karff, of Boston, won the Hazel Allen Trophy and later defeated the national champion, Mrs. Donald Belcher, five to one, for the title.

CHETNIKS. See YUGOSLAVIA under *History*.

CHICAGO. See FASHION EVENTS, *PLANNING*, *RAPID TRANSIT*, *SEWAGE AND SEWAGE TREATMENT*, *WATER WORKS AND WATER PURIFICATION FOR CHICAGO SUN*, see *NEWSPAPERS AND MAGAZINES*.

CHILD-GUIDANCE CLINICS. See *JUVENILE DELINQUENCY*.

CHILD LABOR. See *CHILDREN'S BUREAU*; *LABOR CONDITIONS*; *LABOR LEGISLATION*.

CHILD PSYCHOLOGY. See *PSYCHOLOGY*.

CHILDREN'S BUREAU. The objectives of the Children's Bureau of the U.S. Department of Labor, during the past year, as summarized by the Chief of the Bureau in the annual report of the Secretary of Labor, have been threefold: To support, promote, and develop in every possible way the fullest measure of protection for the health and well-being of children wherever they may live and however immediately or remotely they may be at present affected by defense activities; to help to cushion the impact upon child life of dislocations and strains associated with defense effort, and to insure the protection of children in areas of potential danger from overt attack, through adequate advance planning. This program has been carried on in conjunction with the regular functions of the Children's Bureau (see *YEAR BOOK* for 1940).

In addition to studies carried over from the previous year, research was conducted during 1941 on the following subjects: Maternal and child-health facilities in 654 cities, home-delivery services conducted by 15 medical schools in 11 States; the health, welfare, and employment status of the children of agricultural laborers in a Texas community, leading causes of death among children under 20 years of age; employment conditions among children under 18 out of school in three cities; regulation of minors in public performances; child labor in Alaska; public services for children in St. Louis, Mo.; community resources for mentally retarded children; administrative provisions of laws relating to State training schools; and children in defense communities.

The Division of Health Services, the Child Welfare Division, and the Industrial Division are each charged with administration of a specific program. In the Division of Health Services are combined the former Maternal and Child Health Division and the former Crippled Children's Division. The Director of the former Maternal and Child Health Division is Director of the new division, which also

has an Assistant Director for Maternal and Child Health and an Assistant Director for Crippled Children.

Maternal and child-health services, services for crippled children, and child-welfare services were in operation in all the States, the District of Columbia, Alaska, Hawaii, and Puerto Rico throughout 1941. The full amounts authorized by Congress for grants to the States for these services under the Social Security Act as amended in 1939 were appropriated for the first time in 1941: For maternal and child-health services, \$5,820,000; for services for crippled children, \$3,870,000, for child-welfare services, \$1,510,000.

State maternal and child-health programs show extension in 1941 of established services such as prenatal and child-health conferences, postgraduate professional education for staff members and for practicing physicians and dentists, and nutrition service, together with the provision of a limited amount of medical and hospital care for mothers at delivery and for sick children and of clinical case consultation by obstetricians or pediatricians.

Health services given under the supervision of State health departments during the year ended June 30, 1941, included the following: For mothers—464,989 medical visits and 768,082 nursing visits for antepartum care, 20,940 visits for delivery nursing service, and 39,655 medical examinations and 499,638 nursing visits for postpartum care; for infants—508,831 visits for medical service and 1,490,861 visits for nursing service; for preschool children—581,094 medical visits and 1,323,108 nursing visits; and for school children—1,713,398 medical examinations and 1,619,981 nursing visits. Twenty-five States had programs for improving the care of premature infants.

Infant and maternal mortality rates continued to fall in 1940. There were 47 deaths of infants under 1 year of age per 1,000 live births in 1940 and 38 maternal deaths per 10,000 live births. The corresponding figures for 1939 were 48 and 40, and for 1935, the year in which the Social Security Act was enacted, they were 56 and 58, respectively. The 1940 figures are the lowest ever recorded in the United States and indicate that work for improvement in these fields is being successfully carried forward.

Significant progress was made in extending and improving services for crippled children during 1941. Diagnostic clinic services were further extended, especially in rural areas, and admission requirements were simplified. Improved procedures were developed for meeting the needs of children with poliomyelitis during epidemics and the after-care period. Ten States encountered epidemics of poliomyelitis during 1941, and approximately \$200,000 from Federal funds was allotted to States on the basis of special need during poliomyelitis epidemics. The Children's Bureau nursing consultants assisted the States involved in obtaining the services of qualified orthopedic nurses. Methods of locating crippled children were improved with the result that the number listed on the registers rose from 266,460 in June, 1940, to 307,478 in June, 1941.

Child-welfare programs in all States have been substantially influenced by the expansion of services and the additional leadership made possible through Federal funds, and in many States improved legislative standards have been enacted. On May 31, 1941, nearly 49,000 children in 50 States and Territories were receiving case-work services from child-welfare workers paid in whole or in part from Federal funds. The corresponding figure in

1940 was 41,000 for 45 States and Territories. Because of serious problems developing in defense areas, provision was made in the 1942 plans of 35 States for children's workers in 73 such areas whose salaries would be paid in whole or in part from Federal funds. The Committee on Case Recording in Public Child Welfare Agencies in Rural Areas completed its work during the year.

The constitutionality of the Fair Labor Standards Act of 1938, of which the Children's Bureau administers the provisions relating to child labor, was upheld by the U.S. Supreme Court, Feb. 3, 1941 (see LABOR LEGISLATION). In the fiscal year 1941 cooperative arrangements were completed under which State employment and age certificates issued by Louisiana and Nevada are accepted as proof of age under the act. This brings to 47 the number of jurisdictions in the cooperating group. Plans for the issuance of age certificates in Alaska were pending at the end of the year. In four States, Federal certificates are issued with the cooperation and assistance of State and local officials.

The purpose of making age certificates available is to prevent violations by giving employers a means of being certain that they are not employing children under the legal age. In addition, inspections are made by Bureau representatives to enforce the provisions of the act, and legal proceedings are instituted against the establishments persisting in violation. The educational effect of this enforcement program carries far beyond the number of establishments actually visited.

Investigations into the hazards for young workers in the logging and sawmilling industries and occupations involving operation of power-driven woodworking machines were made during the year, and hazardous-occupations orders No. 4 and No. 5 were issued by the Chief of the Children's Bureau making the employment of minors in these occupations subject to an 18-year minimum age, effective Aug. 1, 1941. During the latter part of 1941 the hazards of the shipbuilding and ship-repairing industry were being investigated.

Two States, New Jersey and Florida, established a 16-year age minimum for employment in factories at any time and in any occupation during school hours, and materially strengthened their child-labor laws in various other respects. This brings the total number of States with a basic 16-year age minimum for employment to 14.

Preliminary figures from the 1940 census made available during the year show that the number of working children 14 to 17 years of age, inclusive, and particularly those 14 and 15 years of age, decreased considerably during the decade 1930-40, in spite of a slight increase in the total population of those ages. Nevertheless, there were 255,336 children 14 and 15 years of age and 1,047,316 minors 16 and 17 years listed as in the labor force in April, 1940. An upswing in the employment of minors began to be evident in 1940 and was accelerated in 1941 with the rapid increase in employment associated with the vast defense program. According to reports from 21 States where employment certificates are issued on request for 16- and 17-year-old minors the number of such certificates issued in 1939 was 8,000, in 1940 it increased to 15,000; and in the first half of 1941, 20,000 certificates were issued, an increase of 282 per cent over the number for the first half of 1940. Even the 14- and 15-year-old children were leaving school for work in increasing numbers in 1941, in States where the law still allows them to do so. In 29 States and the District of Columbia, where the minimum age for employment during school hours remained un-

changed in both years, 2,355 first regular employment certificates were issued for 14- and 15-year-old boys and girls in the first half of 1941 compared with 1,236 in the first half of 1940, an increase of nearly 100 per cent.

The increase in employment of children under 16, although not yet large in numbers, indicates a tendency toward a breakdown in child-labor and educational standards that may easily become serious. Pressure toward the lowering of child-labor and school-attendance laws is already evident in bills introduced in a number of State legislatures. The Children's Bureau is increasingly concerning itself with measures that will prevent a widespread breakdown in standards and that will make the impact of defense employment as light as possible on young people whose growth and education are still incomplete.

Aspects of the defense program in which the Children's Bureau has recognized its special responsibility because of their bearing on maternal and child health and welfare include the nutrition program, protection of children and mothers in defense areas, the problem of providing day care for children of employed mothers, and the care and supervision of European children coming to the United States from war zones.

The Chief of the Children's Bureau serves as child-welfare consultant to the Director of Defense Health and Welfare Services (q.v.) and the Bureau maintains liaison officers with the Division of Recreation in the Federal Security Agency (q.v.) and the Office of Civilian Defense. The Associate Chief of the Bureau visited England in February, as a member of a civil-defense mission under the auspices of the Department of War, to study the provisions for the health and welfare of the civilian population with special reference to children. The report of this study is being printed under the title, "Civil Defense Measures for the Protection of Children." The Children's Bureau also took an active part in the planning and program of the National Nutrition Conference for Defense, held in Washington, May 26-28.

Day care for children whose mothers are being drawn into employment as a result of the defense program emerged as a pressing problem during the year. The Children's Bureau called a conference which met in Washington, July 31 and August 1, to consider all aspects of the question. The conference adopted a statement of principles and recommended a plan for continuing committees. In October consideration of the entire problem was placed on a more permanent basis through the appointment of an advisory committee on day care of children to work with the Children's Bureau. In addition, a Joint Planning Board on the Day Care of Children has been formed by the Children's Bureau, U.S. Department of Labor, the Office of Education, Federal Security Agency, and the Work Projects Administration, Federal Works Agency.

In defense areas where the normal population has been doubled or redoubled acute problems of child health and welfare are created by the lack of suitable housing for families with children, the inadequacy of hospital and school facilities, and the shortage of physicians, public-health nurses, and social workers trained in child welfare. In accordance with a plan worked out in cooperation with the Office of Civilian Defense (q.v.) opportunities for volunteer workers to participate in child health and welfare work under the direction of professional workers are to be provided on a large scale. A manual for volunteers on child care contains suggestions for a basic course and shorter specialized

courses for volunteers, and lists many kinds of work that can be undertaken by volunteers.

In connection with the care of European children seeking refuge in the United States, the Children's Bureau designated 184 child-caring agencies in 40 States to cooperate with the United States Committee for the Care of European Children for service in placement and supervision of the children. The names of 7,034 children were on the central register of European children maintained by the Children's Bureau, as of Nov. 30, 1941; of these, 1,068 children were the responsibility of the United States Committee for the Care of European Children.

Cooperation with other American Republics increased in importance during the year, with the decision to hold the Eighth Pan American Child Congress in Washington, D.C., May 2-9, 1942, and the appointment of the Chief of the Children's Bureau as chairman of the organizing committee. The Children's Bureau assigned a pediatrician and a social worker to assist the National Children's Bureau of Brazil, a social worker to the American International Institute for the Protection of Childhood (with headquarters in Uruguay), and a technical consultant on children's services to the Ministry of Health of Paraguay. The program for 1942 also provided for a number of specialists from the other American Republics to visit the United States for a period of in-service observation and field study under the auspices of the Children's Bureau.

A list of publications in these and other fields relating to children may be obtained from the Bureau. See JUVENILE DELINQUENCY

KATHARINE F. LENHOOT.

CHILD WELFARE. See AMERICAN LEGION, CHILDREN'S BUREAU; JUVENILE DELINQUENCY, PHILANTHROPY, SOCIAL SECURITY BOARD.

CHILE. A South American republic. Capital, Santiago

Area and Population. Area, 286,396 square miles, population, 5,000,782 at 1940 census (4,287,445 in 1930). Of 105,463 aliens residing in Chile in 1930, 23,439 were Spaniards, 11,070 Italians, and 10,861 Germans. United States citizens numbered 1,281 on Jan. 1, 1941. Chileans are predominantly of European (chiefly Spanish) origin but there is a considerable Indian strain in the lower classes. Estimated populations of the chief cities in 1939 were: Santiago, 829,830; Valparaíso, 263,228; Concepción, 77,589; Antofagasta, 53,591; Viña del Mar, 49,488; Iquique, 46,458; Talca, 45,020; Chillán, 39,511.

Defense. Under the compulsory military service system, all youths of 20 are called to the colors, mostly for nine months, and then serve in the reserve until 45. As of Jan. 1, 1941, the active army numbered 40,915 (including some 20,000 regulars) and trained reserves 212,000, active air force, 1,912 men, with over 100 airplanes. The navy comprises 1 battleship, 3 cruisers, 8 large destroyers, 9 submarines, and various auxiliary vessels, manned by about 8,000 men in all. A United States military aviation mission was engaged in 1940. Defense appropriations increased from 448,916,000 pesos in 1939 to 621,898,000 (estimate) in the 1941 budget, exclusive of the special appropriation of 4,000,000,000 pesos authorized in 1941 (see *History*).

Education and Religion. Elementary education is compulsory, but about 25 per cent of all adults remain illiterate. In 1940 there were estimated to be 900,000 children of school age, of whom 583,664 were enrolled in public schools and 90,595 in 834 private schools. Of the private schools, 657 received

state aid. The five universities had 6,448 students in 1939. Roman Catholicism is professed by the great majority of Chileans, but the Church was disestablished in 1925.

Production. At the 1930 census, 37.8 per cent of the working population was engaged in agriculture and 22.1 per cent in industry and mining. Yields of the chief crops in 1939-40 were (in metric tons): Wheat, 870,613; barley, 76,364; oats, 84,382; rye, 8,000; corn, 63,446 (in 1938-39). Exports of other leading farm and ranch products in 1940 were (in metric tons): Beans, 34,623; lentils, 14,145; dried peas, 11,754; wool, 10,995, fresh and frozen meats, 17,359; hides, 3,213, hemp fiber, 4,108. Lumber production in 1939-40 was 23,800,000 board inches (30,400,000 in 1939).

The 1940 mineral output (in metric tons) was: Copper, 352,010, nitrate, 1,428,379, iron, 1,748,418; coal, 1,937,438, iodine, 1,294. Gold production was about 10,663 kilograms, silver, 47,139 kilograms. Average number of workers in the mining industry in 1940, 63,181, in lumbering, 14,611 in 1939-40. The index of industrial production (1927-29 100) increased from 140.5 in 1936 to 167.2 in 1940. In the latter year the output of cement was 9,061,000 bags (of 93.5 lb.); coke, 96,500 metric tons, knitting wool, 411 metric tons; cloth, 3,957,000 meters, refined sugar, 123,958 metric tons; beer, 78,028,000 liters; gas, 93,699,000 cu meters; electric powers, 569,806,000 kilowatt-hours. Wages paid to workmen in 1940 totaled 2,455,500,000 pesos (2,018,900,000 in 1939).

Foreign Trade. Merchandise imports in 1940 were 505,900,000 pesos of sixpence gold (equivalent to \$0.2061) against 410,400,000 in 1939, exports, 679,500,000 gold pesos in 1940 against 660,500,000 in 1939. Imports of gold and specie were 1,205,300 gold pesos in 1940 (307,100 in 1939), exports, 17,246,200 in 1940 (10,909,000 in 1939). Minerals accounted for 83 per cent of the 1940 exports. Chief export items were (in 1,000 gold pesos): Copper bars, 380,838; nitrate, 128,161; gold and silver ores and concentrates, 30,651; wool, 23,362; gold in bars, 17,172; iron ores, 14,698, iodine, 12,843; beans, 12,156. Leading imports (in 1,000 gold pesos): Textiles, 81,798, chemicals, 70,258, metals and products, 61,185, industrial machinery, 56,615; transportation equipment, 52,986; coal and fuels, 45,252. The United States in 1940 supplied 47.9 per cent of all Chilean imports by value (31.1 in 1939), United Kingdom, 10.4 (8.3); Germany, 3.5 (22.7). Of the 1940 exports, the United States took 58.3 per cent (30.5 in 1939); United Kingdom, 5.8 (12.3), Germany, 0.0 (8.4).

Finance. Actual ordinary revenues for 1940 were 2,051,560,000 pesos (1,792,524,000 in 1939); expenditures, 2,201,821,000 (1,777,383,000 in 1939). The deficit of 150,261,000 pesos in 1940 was reduced to 120,180,000 pesos by subtracting the accumulated surplus of 30,081,000 pesos carried over from preceding budgets. The internal debt of the national government was 2,554,296,000 paper pesos on Dec. 31, 1940 (2,274,225,000 on Dec. 31, 1939) and the external debt was equivalent to \$345,489,146 (\$353,941,973 on Dec. 31, 1939), of which \$196,027,430 was held in the United States. Interest payments on the external debt averaged 2.0925 per cent in 1939, 1.525 per cent in 1940, and 1.539 per cent in 1941. The peso of sixpence gold (\$0.2061) is used only in foreign trade transactions. Exchange values of the paper peso in 1940 were (1939 rates in parentheses): Official, \$0.05163 (\$0.05163); export draft, \$0.04 (\$0.04); curb, \$0.03027 (\$0.03080); free, \$0.03221 (\$0.03222).

Transportation. At the beginning of 1941, Chile

had about 5,450 miles of railway line in operation and 277 miles under construction. Construction of six additional lines was authorized Nov. 27, 1940. State railways in operation in 1940 extended 2,933 miles; operating income for the year was 520,000,000 pesos. Passengers on all lines in 1940 numbered 20,920,800; freight transported, 1,894,771,900 ton-kilometers. For highways, see **ROADS AND STREETS**. Chilean national airlines in 1940 carried 2,574 passengers and 15,614 kilos of freight. In April, 1941, Pan American-Grace Airways inaugurated a three-day service between the United States and Santiago. The Chilean merchant marine on June 30, 1939, comprised 106 ships of 176,289 tons.

Government. The Constitution of Oct. 18, 1925, vested executive powers in a President, elected by popular vote for six years and ineligible to succeed himself, and legislative powers in a popularly elected Congress consisting of a Senate of 45 members serving for eight years and a Chamber of Deputies of 146 members serving four years. Pedro Aguirre Cerda (Radical) was elected President by a Popular Front coalition on Oct. 25, 1938, and assumed office Dec. 24, 1938. His cabinet represented a coalition of the Radical, Socialist, and Democratic parties. It had the support of the Communist party in Congress.

HISTORY

Political Trends. President Pedro Aguirre Cerda's Popular Front Government during the first half of 1941 was handicapped by the continuance of strife between the Socialist and Communist parties and also within the Radical party (see **YEAR BOOK** for 1940, p. 129-130, for background). The Socialists and Communists were in growing competition for the control of Chile's labor unions, and clashed over the issue of Chile's foreign policy. Led by Minister of Development Oscar Schnake, the Socialists supported the democratic cause in general and Washington's policies of inter-American collaboration in particular. The Communists denounced "Yankee imperialism" more violently than Hitlerism, espoused Stalin's policy of pro-Axis neutrality, and charged Minister Schnake with "selling out" Chile in return for U.S. loans and trade concessions. The Socialists in turn attacked the Communists as "traitors" to Chile and betrayers of the working classes.

The Popular Front was shattered temporarily when the Socialists refused to cooperate further with the Communists and withdrew (Jan. 7, 1941). While the Socialists sought to form a new Leftist Front without the Communists, the other Popular Front parties—Radicals, Radical Socialists, and Democrats—formed a bloc for mutual support in the March Congressional elections. Meanwhile, with Socialist support, Congress on January 22 approved an amended version of the bill outlawing the Communist party, introduced by the opposition Conservative-Liberal bloc in December, 1940. However President Aguirre Cerda on February 21 vetoed the measure as undemocratic. The three Socialist members of the Cabinet then offered their resignations on the eve of the elections, but the President refused to accept them.

The Elections. The Congressional elections, held on March 2, resulted in the victory of the Leftist parties, who wrested control of both the Chamber of Deputies and Senate from the opposition. The conservative bloc retained 62 seats in the Chamber (Conservatives, 32; Liberals, 22; Agrarians, 3; Falangists, 3; Popular Socialist Vanguard, 2 as compared with the 85 seats won by the Leftists (Radicals, 44; Communists, 15; Socialists, 15;

Democrats, 9; Dissident Socialists and others, 2). In the Senate the Rightist parties held 21 seats to 24 for the Leftists; the party line-up was: Conservatives, 11; Liberals, 8; Agrarians, 1; Independent, 1; Radicals, 13, Socialists, 5; Communists, 4; Democrats, 2.

The Communists made the greatest gains, electing 17 Deputies and 4 Senators as against 7 Deputies and 1 Senator in the previous Congress. They displaced the Socialists as the fourth largest political party, measured by representation in Congress. On the other hand, the pro-Fascist Popular Socialist Vanguard, which joined the conservative coalition, retained only two seats in the Chamber. In the municipal elections of April 6 the conservative bloc did better, winning control of a slight majority of the new councils.

The electoral victory provoked further factionalism within the Leftist bloc in Congress. The Socialists, holding the balance of power between Left and Right in both houses, used it to press their fight with the Communists. They voted with the opposition on measures adversely affecting the Communists but supported the Government on other issues. This caused friction between Radicals and Socialists.

Radical Party Split. Beginning in April a serious split developed within the Radical party. The Radical Minister of Interior, Arturo Olavarría, suspended the Communist organ *El Siglo* for attacking the governments of Spain and the United States. At the same time he closed the ultra-conservative newspaper *Imparcial* for violent criticism of the Chilean Government. He also ordered the deportation of three Spanish refugees connected with *El Siglo*. President Aguirre Cerda and the five other Radical Cabinet Ministers approved Minister Olavarría's action, but the party's executive committee declared it a violation of party principles and demanded the resignation of all Radical Ministers. When President Aguirre Cerda refused to accept the resignations, the executive committee on April 29 expelled all six Cabinet Ministers from the party. This schism was healed during the party convention of May 16-22. Five of the Ministers agreed to adhere to party principles and were readmitted to membership, but Olavarría held to his position.

His refusal to resign from the Cabinet led the Radical executive committee once more to demand the resignation of the five Radical Ministers. President Aguirre Cerda refused to give way under pressure. He accepted the resignations on June 10 and the next day appointed five new Ministers of independent views. The Radical executive committee, fearful of losing further influence, then agreed to accept the President's decisions regarding Cabinet membership. On June 24 the Radicals signed a working agreement with the Socialists from which the Communists were excluded. The Socialist campaign for elimination of the Communists from the Popular Front appeared well on the road to success when the outbreak of the German-Russian war (June 22) and the subsequent reversal of the Communist party line paved the way for the reestablishment of cooperation among all of the Popular Front parties.

Popular Front Reformed. With Socialist cooperation, the Government parties on July 24 and 30 rejected opposition motions to expel the Communist Deputies and Senators elected March 2. However the Socialists announced that they would introduce a constitutional amendment barring representation in Congress to Chilean parties owing allegiance to foreign entities such as the Third Inter-

national and the German National Socialist party. Meanwhile the Communists had ceased their attacks upon "Yankee imperialism" and espoused the Socialist policy of aid to the democracies and support of Washington's hemisphere defense program. This led the Socialists and Communists to compose their differences in a political accord reached early in September.

A further obstacle to Popular Front unity was removed September 16 with the resignation of Minister of Interior Olavarría. His withdrawal made possible the return of the Radicals to the Cabinet in a reorganization effected October 6. As the new Minister of Interior, a post corresponding to that of Premier in other countries, the President appointed Dr. Leonardo Guzmán, a strongly anti-Nazi and pro-democratic former Minister of Education. Three other Radicals were given posts in the new Cabinet.

The new unity of the Popular Front was reflected in steps taken during October to coordinate the action of the Leftist parties behind the President's program and against alleged Rightist conspiracies to recapture power. This was followed by the unexpected retirement of President Aguirre Cerda on November 10. Stating that ill health made it impossible for him to carry on his duties, he turned over the Presidential powers to Gerónimo Méndez, leader of the Radical party, after first appointing Méndez Minister of Interior to give him Cabinet rank.

President's Death. The Rightist parties vigorously attacked the Acting President and the manner of his appointment. However Méndez was supported by the armed forces and by all four Leftist parties. The death of President Aguirre Cerda on November 25 (see *NECROLOGY*) plunged Chile into a heated election campaign, as the selection of his successor was set for Feb. 2, 1942. The Socialist party on December 15 nominated Minister of Development Schnake for President. The Radicals selected Juan Antonio Ríos as their candidate. Ex-President Carlos Ibáñez, who was expected to receive strong Rightist support, announced his independent candidacy. The complete line-up in the Presidential race was still incomplete at the end of the year.

Vanguardist Plot. The reborn unity of the Popular Front was in part due to recurrent threats from anti-democratic groups. Members of the pro-Nazi Popular Socialist Vanguard attacked the Radical convention in Santiago on May 16, killing one delegate and wounding four others. The police later arrested 32 Vanguardists on charges of plotting a second coup against the Government (see *YEAR BOOK* for 1938 for previous attempt). Since the Vanguardist leader, Jorge González von Marées, was a Deputy and immune to arrest, the Minister of Interior on May 24 placed him in an insane asylum for observation, but he was released on order of the Court of Appeals.

At this time a new threat to the Government appeared in the return to Chile of former President Carlos Ibáñez, who headed the virtual dictatorship of 1927-31 and fled the country in 1939 following an abortive revolt against the Aguirre Cerda Government.

German Nazi Activities. Suspicion of Nazi activities among the Germans of southern Chile (see preceding *YEAR BOOK*) was increased by developments in Argentina and Bolivia (qq.v.) and by a conference of the German Ambassadors to Argentina, Bolivia, Chile and Peru held in Santiago in March. The Bolivian Government's action to prevent a pro-Nazi coup in July led Chilean authorities to

take precautionary measures and to investigate German Nazi activities more closely. Early in August a number of arms caches were seized in the vicinity of Puerto Montt and five leaders of the *Landesgruppe*, a so-called German sports organization, were arrested for their connection with a "militarized organization." During the first half of September the investigation unearthed evidence of additional Nazi organizations among German citizens in Chile that seemed designed for subversive action. Arrests of more than a score of additional Germans as leaders of these units followed. However the investigation was interrupted at the end of September when the Chilean Supreme Court ordered the unconditional release of 13 Germans arrested in Santiago and taken to Valdivia to face charges of subversive activities.

Meanwhile the Government on September 5 introduced a bill in Congress outlawing associations "inspired by foreign governments or political parties or in any way contrary to the established democratic regime, even if the associations are composed to a certain extent of Chileans."

Other Internal Affairs. Internal and external dangers led Congress late in the year to approve a Government bill for the expenditure of 4,000,000,000 pesos for national defense.

The world crisis continued to affect the Chilean economy adversely through lack of shipping and of export markets for non-defense materials, and through inability to obtain manufactured articles in the customary quantities abroad. In July Congress empowered the President to prohibit the export of all merchandise of Chilean or foreign manufacture. The rise in the cost of living led the Government to increase salaries of municipal employees by from 14 to 71 per cent on June 25. In May there was a serious strike of street railway workers which threatened to tie up all public utility services. The shipping shortage, reflected in a growing scarcity of foodstuffs in nonagricultural northern Chile, led the Government on June 26 to commandeer cargo space on ships engaged in coastal trade. In September the Government expropriated 350 miles of British-owned railway lines in the province of Tarapaca.

The Reconstruction Corporation and Development Corporation established in 1939 for earthquake rehabilitation and economic development purposes (see *YEAR BOOKS* for 1939 and 1940) continued their operations in 1941. The President's message to Congress of May 21, 1941, surveyed their accomplishments up to that time (see *Bulletin of Pan American Union*, October, 1941, p. 602, for abstract of his remarks.) Early in 1941 funds allotted for the redemption or amortization of the foreign debt by the decree of Jan. 31, 1935, were temporarily diverted and placed at the disposal of the Development and Reconstruction Corporations. The Development Corporation on Aug. 1, 1941, obtained authorization from the Export-Import Bank of Washington for an additional credit of \$5,000,000 to be used for the purchase of U.S. agricultural and industrial products. Up to Aug. 15, 1941, the Corporation had utilized only \$3,485,335 of the \$17,000,000 credit previously advanced by the Export-Import Bank.

Foreign Relations. Although President Aguirre Cerda repeatedly emphasized that Chile's policy of strict neutrality remained unchanged, there was a noticeable trend toward closer collaboration with the United States during the last half of 1941. This was due to rapidly growing economic and financial relations with the United States, the revelations concerning Nazi activities in Chile and

neighboring republics, the shift in the Communist party line, and mounting evidence that the United States would enter the war against the Axis. In connection with Chilean negotiations for a United States "lease lend" armament loan, pro-Nazi Deputies in October charged in Congress that Washington was attempting to obtain air and naval bases in Chile in return for the loan. This was denied by Foreign Minister Juan B. Rossetti.

Immediately after Japan attacked the United States the Chilean Cabinet unanimously decided to issue a decree declaring non-belligerent the United States and other American nations which had entered the conflict. The decree declared Chile's support of the United States and stated that Chile would fulfill all obligations relating to continental defense. The navy began a patrol of the entire coast of Chile, convoying both domestic and foreign merchant ships. On December 10 Foreign Minister Rossetti announced an agreement with Argentina to fortify the Strait of Magellan. The German-controlled Condor air line was forced to suspend its service into Chile December 15 through inability to get gasoline and other supplies. The Government asked Congress for special powers to control oil, metals, imported fuels, and otherwise to adjust Chile's economy to war conditions.

Chile took the initiative among the American republics by seizing on February 15, three Danish ships tied up at Talcahuano since the German occupation of Denmark. Two other Danish ships were later requisitioned and in July they were placed in service between Chile, the United States and intermediate points, under the management of a Chilean shipping company. The Government announced that ample compensation would be paid the owners and the ships returned at the end of the war. However the Minister of National Defense in July rejected a bill of \$631,000 from the owners for occupation of the ships to June 30.

Chile cooperated actively in the development of closer political and economic relations among the American republics. Early in 1941 the Minister of Foreign Affairs visited La Paz and Lima and concluded a number of political, cultural and economic accords. (See *BOLIVIA* under *History* for accords reached in La Paz January 16.) Three Chilean-Peruvian accords were initiated in Lima February 7. Two of them coordinated defense policies and plans, provided for peaceful settlement of mutual disputes, and encouraged cultural exchange. The third established the bases for a new commercial treaty. A number of important agreements were concluded with Argentina (see *ARGENTINA* under *History*).

See *BOLIVIA*, *CANADA*, *PERU*, under *History*; *CHEMISTRY*, *INDUSTRIAL*, *COMMUNISM*, *CUSTOMS*, *BUREAU OF LABOR CONDITIONS*, *LEND-LEASE ADMINISTRATION*, *SOCIALISM*.

CHINA. A republic of eastern Asia. Provisional capital, Chungking. Nanking, the former capital, was captured by the Japanese in December, 1937, and Hankow, to which most of the Chinese Ministries were then transferred, fell in October, 1938.

Area and Population. Including the nominal dependencies of Sinkiang (Chinese Turkestan), Outer Mongolia (see *MONGOLIA*), and Tibet (q.v.), over which the Central Government exercised little or no actual control, and the former Chinese Provinces incorporated in the Japanese protectorate of Manchoukuo (q.v.), China has an area estimated by the Ministry of the Interior in 1937 at 4,516,934 square miles and a total population of 466,785,856. Official 1937 estimates of the

area and population by Provinces are shown in the accompanying table.

AREA AND POPULATION OF CHINA

Province (Capital ^a)	Sq miles	Population
Anhui (Anking)	51,902	23,265,368
Chahar ^b (Wanchuan, Kalgan, Chang-chiakow)	107,705	2,035,957
Chekiang (Hanghsien, Hangchow) ..	39,791	21,230,749
Fukien (Minhou, Foochow)	61,275	11,755,625
Heilungkiang ^c (Lungkiang, Tsitsihar)	173,600	3,822,344
Honan (Kaifeng)	66,693	34,289,848
Hopei (Paoting since June 1, 1935) ..	59,377	28,644,737
Hunan (Changsha)	91,595	28,293,735
Hupeh (Wuchang)	80,190	25,541,635
Jehol ^d (Chengtch)	74,297	3,054,306
Kansu (Kaolan, Lanchow)	145,968	6,705,445
Kiangsi (Nanchang)	77,301	15,820,406
Kiangsu (Chinkiang)	41,830	36,469,328
Kirin ^e (Tungki, Kirin)	109,413	7,666,641
Kwangsi (Yungning, Nanning) ..	84,007	13,385,218
Kwangtung (Fanyu, Canton, Kwangchow)	83,940	32,385,215
Kwoichow (Kweiyang)	69,297	9,043,207
Liaoning ^e (Schenyang, Mukden, Fengtien)	124,256	16,465,303
Ningsia ^b (Ningsia)	106,143	1,023,143
Outer Mongolia ^d (Kulun, Urga ^e)	625,946	2,077,669
Shansi (Taiyuan)	58,662	11,601,026
Shantung (Tsinan)	69,216	38,029,294
Shensi (Changan, Sian)	72,353	7,717,881
Sikang (Kangtung)	143,475	968,187
Sinkiang ^d (Tihwa, Urumtchi)	705,953	4,360,020
Suiyui ^b (Kwaisui, Kweihua)	125,220	2,083,693
Szechwan (Chengtu) ..	166,529	52,963,269
Tibet ^d (Lhasa)	469,416	3,722,011
Tanghai (Sining)	269,187	1,106,054
Yunnan (Kunming, Yunnanfu)	123,572	11,994,549

^a Where more than one name is given for the respective capitals in parentheses, they represent the official name, postal map name, and popular or ancient name, in the order given. ^b Chahar, Ningsia, and Suiyui Provinces, together with part of Jehol, form the geographical region known as Inner Mongolia. ^c The Provinces of Heilungkiang, Kirin, and Liaoning constitute the geographical region known as Manchuria, which on Feb. 18, 1932, was proclaimed the free State of Manchoukuo. Jehol Province was incorporated in Manchoukuo in 1933. ^d Dependencies. ^e The Mongol name for Urga has been changed to Ulan Bator Khoto.

As no census has been taken in modern times, the above figures are merely rough estimates. Including the nominal dependencies, the area is roughly equal to that of the United States and Mexico combined, while the population is approximately one-fourth of the world's total. In addition there were estimated to be 7,828,888 Chinese residing abroad in 1936. The Japanese civilian population of China on Jan. 1, 1940, was 345,700, an increase of 300 per cent since July, 1937. The estimated population of Shanghai and its environs in 1936 was 3,489,998 including 1,450,685 persons in the Foreign Settlements, Peiping, capital of China until 1928, 1,556,364, Tientsin, 1,292,025; Nanking, 1,019,948, Tsingtao, 514,769. Estimated populations of the other chief cities in 1931 were: Canton, 861,024; Hankow (including Wuchang and Hanyang), 777,993; Chungking, 635,000; Wenchow, 631,276, Changsha, 606,972; Hangchow, 606,930; Weihaiwei, 390,337; Foochow, 322,725; Soochow, 260,000; Amoy, 234,159, Ningpo, 218,774; Wanhhsien, 201,937; Chinkiang, 199,776.

Education and Religion. Between 25 and 50 per cent of the population were estimated to be literate in 1937, compared with an estimated 15 per cent in 1912. In 1935 there were 16,000,000 children in primary schools, of whom 12,383,479 were in 259,095 regular schools and the rest in one-year primary schools. Enrollment in secondary schools was over 600,000 in 1941-42, in the 115 universities, over 45,000. Between the outbreak of war in 1937 and October, 1939, 17 universities and colleges moved from Japanese-occupied areas to Yunnan, Kweichow, and Kwangsi provinces, 17 to Hunan and Szechwan, and 5 to Shensi and Kansu.

Several new technical and normal colleges were founded during this period by the Chungking Government.

With the exception of Christians and Mohammedans, most Chinese practise and profess all three indigenous or adopted religions—Confucianism, Buddhism, and Taoism. The Mohammedans are estimated at about 20,000,000. In 1934 there were 2,623,560 native Roman Catholics and 123 Catholic missions, with a staff of 16,241. The Protestant churches, with 1,130 mission stations and 488,539 communicants in 1932, had 19 colleges, 267 middle schools, and 37,714 students in 1934. The number of Christian missionaries in China declined from nearly 6,000 in 1937 to about 3,600 on June 30, 1941.

Production. Previous to the outbreak of Chinese-Japanese hostilities in 1937, China was the world's leading producer of rice, soybeans, tea, kaoliang, sweet potatoes, millet, and vegetable oils; it ranked second in the output of raw silk and wheat; third in cotton, and was an important producer of corn, tobacco, fruits and vegetables, and cane sugar, as well as the leading exporter of eggs and tung oil. Estimated production of rough rice in 1940-41 was 2,440,000,000 bu., wheat in 1941, 19,440,000 metric tons (preliminary); cotton in 1940, 2,250,000 bales of 500 lb. (compared with an average of 3,000,000 bales previous to 1937), flue-cured tobacco in 1940, 140,000,000 lb.; rape-seed in 1940, 3,014,460 metric tons, raw silk in 1940, 107,430 picul bales (of 132¼ lb.). Production of other crops, in metric tons, was: Bailey, 6,371,400 in 1937; oats, 852,500 in 1937; corn, 6,130,100 in 1936, sesamum, 865,000 in 1936, peanuts, 2,631,100 in 1936; soybeans, 5,911,000 in 1936. Tea production is estimated at 300,000 to 500,000 metric tons annually. The wool and mohair clip for China and Manchoukuo was about 55,000 metric tons in 1938.

China is normally one of the world's principal producers of antimony, tin, tungsten, and manganese. The estimated mineral output of all China, excluding Manchoukuo, in 1940 was (in metric tons except as stated): Coal, 17,828,711, antimony, 7,418, tin ingots and slabs, 23,361; tungsten ore, 11,580; white alum, 21,000, arsenic, 1,200, coke, 50,430; copper ore, 1,100, gold, 377,000 fine oz.; gypsum, 75,000, iron ore, 551,000, pig iron, 107,000, lead ore, 1,800, crude petroleum, 440,000 U.S. gal., potash, 3,317, quicksilver, 118, rock salt, 926,716, refined salt, 18,837; soda, 1,927; sulphur, 3,600. China's rapidly expanding manufacturing industries (see YEAR BOOK, 1937, p. 152) were disrupted by the war, but during 1937-41 1,354 factories (with a minimum of \$10,000 capital and 30 workers) were established in West China.

Foreign Trade. Excluding bullion, net imports in 1940 were 2,027,143,048 yuan (Chinese standard dollars); net exports, 1,970,120,647 yuan. Leading 1940 exports, in millions of yuan, were: Textile fibers, 341.8; animal products, 322.3; metals and minerals, 140.7; piece goods, 116.1, tea, 104.6; oils, tallow and wax, 100.9. The chief imports were raw cotton, yarn and thread, metals and ores, chemicals, machinery, cotton piece goods, coal and coke, dyes and paints. The chief sources of imports were (in 1,000 yuan): Japan, 466,289; United States, 435,486, India, 175,275; Hong Kong, 146,972; Netherlands Indies, 107,504. The distribution of exports was (in 1,000 yuan): To the United States, 565,669; Hong Kong, 367,502; Great Britain, 196,798; Japan, 126,408; India, 89,903; Singapore, 64,865. For trade with United States in 1941, see TRADE, FOREIGN.

Finance. The Nationalist Government at Chungking estimated expenditures for 1939 at 2,850,000,000 yuan, or three times the 1936 budget. Actual budgetary receipts were variously reported at from 200,000,000 to 1,200,000,000 yuan. The 1940 expenditures were estimated at about 3,500,000,000 yuan. Revenues of the Japanese-sponsored Nanking regime were estimated at about 500,000,000 yuan in 1940.

The indebtedness of the Chungking Government on June 30, 1939, was stated to be 8,100,000,000 yuan (domestic, 5,600,000,000; external, 2,500,000,000). War loans floated by Chungking from July 1, 1937, to June 30, 1940, totaled 3,430,000,000 yuan, 100,000 customs gold units, 100,000,000 U.S. dollars, and £20,000,000 sterling. Extension of a 300,000,000-yen reconstruction loan to the Nanking Government was announced by the Japanese Government June 29, 1941.

The circulation of Chinese (Chungking) legal-tender notes rose from 1,444,900,000 yuan in June, 1937, to 3,962,000,000 yuan on June 30, 1940, according to the Central Bank of China *Bulletin*. As of Dec. 31, 1940, circulation of legal-tender notes was unofficially estimated at 4,000,000,000 to 8,000,000,000 yuan, of provincial bank notes, 500,000,000 yuan, notes of Chinese commercial banks, 200,000,000 yuan, notes of the "Communist Border Government" in northwest China, 50,000,000 yuan. In addition, there was the "wei-wah" or "transfer money" used in Shanghai in connection with the "blocked" accounts of Chinese modern and native banks, the "customs gold unit" adopted in 1930 to protect Chinese customs import revenues from currency depreciation, and Hong Kong currency which circulated extensively in South and Central China. The average nominal exchange rate in U.S. currency of the Chungking Government's legal-tender yuan in Shanghai was \$0.2136 in 1938, \$0.1188 in 1939, \$0.0600 in 1940, and \$0.0524 in July, 1941.

The Japanese-sponsored note issues in "occupied China" increased from 52,900,000 yen in July, 1938, to 1,450,800,000 yen (estimates) on Dec. 31, 1940. On the latter date, these issues were distributed approximately as follows (in millions of yen): Federal Reserve Bank of China, 715.0, Meng Chiang Bank, Ltd., 94.4; Hua Hsing Commercial Bank, 3.3, Central Reserve Bank of China, 38.1; military scrip yen, 600.0.

Transportation. As of Aug. 1, 1939, 4,546 miles of China's railways were reported to be in Japanese-occupied territory and about 2,285 miles in Chinese-held territory. Operations of some of these lines were suspended or restricted to military traffic during 1939-41, but construction of new lines continued in both regions. The most important lines under construction in Chinese-held territory were the Yunnan-Burma and Yunnan-Szechwan railways. Sections of these lines in the vicinity of Kunming were completed during 1940-41 with rails torn up from the severed Yunnan-French Indo-China Railway. The Kwangsi-Kweichow line was scheduled for completion in October, 1941.

In the occupied regions of North China, Japanese military engineers completed the 150-kilometer Luan-Tungkwanchen (Tailo) line and the 200-kilometer Shihkiachwang-Tehchow line. On Mar. 20, 1941, the Japanese-controlled North China Transportation Co., holding a transportation monopoly in North China, was operating railway passenger cars over 5,900 kilometers of line (an increase of 430 kilometers over the preceding year). Its motor-bus lines extended 14,000 kilo-

meters, an increase of 5,000 kilometers during the preceding year, and its inland navigation service about 3,750 kilometers. In all China there were estimated to be over 61,430 miles of highways in 1940. Road construction proceeded at a rapid rate in 1941. In North China about 2,000 kilometers of highway were built or repaired during 1941. Despite Japanese air attacks the Burma Road (see *History*) functioned continuously in 1941; during the six months ending in mid-April, 1941, 16,196 trucks completed the trip from Lashio near the Burma frontier to Kunming.

Japanese air-transport routes in China on Dec. 31, 1940, extended 8,300 kilometers, the principal lines being Shanghai-Peiping, Shanghai-Tsingtao-Dairen, Shanghai-Canton, Tsingtao-Kaifeng-Taiyuan, Peiping-Kalgan, Peiping-Japan, Shanghai-Japan, Canton-Japan, Canton-Bangkok. Under the Chungking Government's auspices, the China National Aviation Corp. (Chino-American) operated routes between Hong Kong, Chungking, and Kunming. There was an airline from Chungking to Calcutta, India, via Lashio, Burma, and a Chungking-Moscow line operated in collaboration with the Soviet Government.

Shipping. At the end of 1940, ocean-going shipping entering Shanghai was about one-fourth of the 1937 level, coastal tonnage about one-third, and tonnage operating on inland water routes from Shanghai about one-fifth. Commercial traffic on the Yangtze remained a monopoly of Japanese interests. During 1940 a total of 91,891 vessels aggregating 25,675,594 tons entered Chinese ports from and cleared for abroad; 10,671 vessels of 13,736,469 tons were Japanese and 1,894 ships of 4,437,605 tons British.

Government. The Organic Law of Oct. 4, 1928, revised on Dec. 29, 1931, and Dec. 27, 1932, vested the supreme governing powers of the Chinese Nationalist Government in the National Congress of the Kuomintang (Nationalist party), acting through the Central Executive Committee, the Central Supervisory Committee, and the Central Political Council. Executive control, however, centered mainly in the hands of Gen. Chiang Kai-shek, commander-in-chief of the Nationalist armies. After the outbreak of hostilities with Japan in 1937, a Supreme National Defense Council, headed by Chiang Kai-shek, assumed direction of all political and military affairs. It included the heads of all party, political and military organs together with other members nominated by the chairman and approved by the Council.

Establishment of a centralized, democratic, representative government, following a period of "political tutelage" by the Kuomintang, is an official objective of the party. Five minority parties in existence in 1941 were as a rule accorded considerable freedom of speech and assembly. Their leaders were members of the People's Political Council, an advisory governmental body serving as the forerunner of the promised parliament. In April, 1940, the People's Political Council approved a final revised draft of a new Constitution for submission to a National Assembly. Pending adoption of the new Constitution, governmental functions were carried on by appointive committees (see *YEAR BOOK* for 1932 for description of committee system).

The chairman of the State Council and nominal head of the government in 1941 was Lin Sen. The chairmen of the five yuan (committees) of the government were: Executive, Gen. Chiang Kai-shek, assisted by Dr. H. H. Kung as vice-chairman; Legislative, Sun Fo; Judicial, Chu Cheng; Exam-

ination, Tai Chi-tao; Control, Yu Yu-chen. Under the chairman of the Executive Yuan were eight ministers, headed as follows: Interior, Chow Chung-yueh, Foreign Affairs, Dr. Wang Chung-hui (replaced by Quo Tai-chi Apr. 3, 1941); Military Affairs, Gen. Ho Ying-chun; Finance, Dr. H. H. Kung; National Economy, Dr. Wang Wen-hao; Communications, Chang Chiangau; Education, Chen Li-fu, Agriculture and Forestry, Gen. Chen Chi-tang. Attached to the Executive Yuan are three subordinate Commissions, supervising Mongolian and Tibetan Affairs, Overseas Chinese Affairs, and Famine Relief.

Leaders of the five minority parties in 1941 were: Communists, Mao Tse-tung; National Socialists, Carson Chang; Young China, Tseng Chi; Social Democrats, Yang Kan-tao; Third Party, Chang Pai-chuen.

HISTORY

Progress of War. Repeated Japanese offensives during 1941 failed to end the military stalemate that developed in the Sino-Japanese War toward the end of 1938. The battle lines existing Jan. 1, 1941, remained relatively unchanged on December 31. With surprising regularity the gains registered by successive Japanese drives were wiped out by powerful Chinese counter-attacks. At the year's end the prospect of a decisive Japanese victory on the Chinese military front seemed farther off than ever.

The first Japanese offensive of 1941 got under way on January 23 against Chinese forces holding a 150-mile section of the Peiping-Hankow railway. The Japanese at first reported sensational gains and the "annihilation" of 100,000 Chinese troops, but by the middle of February the invaders were driven back on their original bases with heavy losses.

South China Campaigns. Renewing their efforts to cut Chinese supply routes in South China, a Japanese force landed at Bias Bay near Hong Kong on February 4 and marched on Waichow, 65 miles northeast of Hong Kong. At Shayuchung and Tamshui they destroyed large stores of tungsten ore and tung oil destined for the United States and Russia as well as imported stocks of gasoline, tires, and tobacco. Failing in the effort to capture Waichow, the Japanese retained their hold on Tamshui and the Bias Bay base. Beginning March 3 they carried out a similar operation along the coast west of Canton, landing troops at six points including Pakhoi, a foreign treaty port. Large non-military supplies, consisting mostly of goods for export to the United States, were seized or destroyed. Efforts by Japanese troops to drive inland from the captured ports met stubborn resistance and on March 9 the Japanese announced the evacuation of their forces.

Toward the end of March the Japanese made new landings along the Kwangtung coast, occupying Kongpeng, Swabue and other points in a new drive against Free China's foreign trade. In mid-April these points were evacuated to permit similar operations along the coasts of Chekiang and Fukien provinces. Ningpo, Wenchow, Taichow, and Foochow were occupied along with large areas in the interior. Chinese counter-offensives then drove the Japanese back to their bases on the coast. Wenchow was recaptured early in May and in September Foochow was evacuated. Meanwhile the invaders made sporadic raids on other Chinese-held ports and bombed towns in the interior. The naval blockade of the coast also was tightened and the supplies entering China by the south coast materially reduced.

Fighting in Interior. Fighting of more or less intensity continued on other sectors of the far-flung front. In March heavy but indecisive fighting was reported near Ichang in the Yangtze valley and in North Kiangsi Province, where a Japanese offensive from Nanchang was halted. Early in May the Japanese launched an offensive against large Chinese forces in the Han river valley between Hankow and Ichang, but again failed to register important gains. At the same time the Nipponese began another attempt to drive the Chinese from southwestern Shansi. They achieved some costly successes against troops under Gen. Wei Li-huang in the Chungtiao Mountains and won control of important crossings of the Yellow River. However the drive was halted in June by guerrilla attacks upon the Japanese lines of communication and the invaders were unable to follow up their initial advantage.

Changsha Captured. With their offensives everywhere bogged down, the Japanese in mid-summer again opened unofficial peace negotiations with the Chungking Government. Gen. Chiang Kai-shek, in line with his improved military position, rejected the Japanese terms and reportedly raised his own demands to include indemnities. After a summer lull, marked by minor Japanese "mopping up" operations and Chinese guerrilla warfare, the invaders in September made another attempt to capture Changsha and open the Hankow-Canton railway by simultaneous drives along the railway southward from Yochow on the Yangtze and northward from Canton. The offensive from Canton soon petered out, but the drive from Yochow resulted in the capture of Changsha on September 28. The Japanese column was driven out almost immediately by a Chinese counter-offensive. On October 1 the Japanese announced that their forces at Changsha had been ordered to withdraw to the vicinity of Yochow. Both sides suffered heavy casualties in this campaign. Missionaries reported that before evacuating Changsha the Japanese engaged in an orgy of looting, murder, and rape.

To relieve pressure on Changsha, Gen. Chiang Kai-shek on September 27 began a drive to recapture Ichang, the city at the mouth of the Yangtze gorges captured by the Japanese in 1940. The Chinese fought their way into Ichang on October 7 and held possession of most of it for three days, but withdrew under severe poisonous gas and bombing attacks from Japanese planes which killed many civilians. While the fighting raged at Ichang, Japanese forces in Northern Honan crossed the Yellow River and on October 4 captured Chengchow, the important junction on the Peiping-Hankow and Lung-Hai railways that the Chinese had saved by dynamiting the dikes of the Yellow River in 1938. Under pressure from surrounding Chinese forces, the Japanese withdrew from the Chengchow district at the end of October after destroying Chinese army bases there. Another powerful Japanese offensive toward Changsha got under way at the end of December.

Air Raids Continued. Throughout most of the year the Japanese air force intensified its destructive bombing raids upon the cities of unoccupied China. The raids on Chungking were renewed beginning March 18 and the capital was raided heavily almost daily until the autumn mists obscured the target in October. A new tactic of sending bombers over in relays kept Chungking residents in shelters for long hours at a time. Two cases of mass suffocation in air-raid shelters were reported, with more than 700 civilians dying in one

incident and 400 in another. The arrival in China during the year of numerous American air instructors and an increasing inflow of American planes offered the Chinese hope of combating the Japanese air raids in 1942.

Military Situation at Year's End. Chinese war casualties up to the autumn of 1941 were estimated by neutral experts at some 2,100,000 dead and wounded as against Japanese estimates of 3,800,000 dead. But despite these losses, War Minister Ho Ying-chin in November stated that China had 6,000,000 soldiers plentifully supplied with small arms and ammunition, of whom 4,000,000 were at the front. An increasing flow of heavy arms and munitions was reaching the Chinese forces from the United States via the Burma Road. China's growing military strength was reflected in General Chiang's declaration on September 18, the tenth anniversary of the Japanese attack on Manchuria, that the recovery of Manchuria was one of his Government's war aims.

Other developments greatly strengthening Chiang's hand were the growing tension between Japan and the anti-Axis powers, America's entrance into the war, and the increasing financial, economic, and military aid extended to Chungking by the United States and Great Britain. On the other hand, the Japanese advance into French Indo-China and Thailand (q.v.) increased the danger that Japan would cut the Burma Road and thus isolate China from all outside sources of supply. Shipments of war material from the Soviet Union across Sinking diminished after the outbreak of the Russo-German conflict on June 22 and were stopped altogether in October. Moreover the economic strain upon the Chinese deepened perceptibly. Most serious of all was the breach between the Kuomintang and the Chinese Communist party, which repeatedly threatened to impair the united front against Japan.

Kuomintang-Communist Split Friction between Chiang Kai-shek's Government and the Communists was intensified when War Minister Ho Ying-chin in October, 1940, ordered the Communist Fourth Route Army to move north of the Yellow River from its guerrilla bases on both sides of the Yangtze. He accused the Fourth Army of not staying within its assigned area, expanding its forces without permission, disobeying orders of the Central Government, and attacking non-Communist Chungking troops. Beginning Jan 6, 1941, Chungking forces attacked and cut up a Fourth Route Army detachment of some 10,000 men near the town of Maolin south of the Yangtze. According to the Communists, the detachment was treacherously entrapped while marching to cross the Yangtze in obedience to the War Minister's order.

Gen. Ku Chu-tung, Chungking's district commander who ordered the attack, charged that the Fourth Army had "lengthily prepared for revolt." The National Military Council cited him for suppressing "rebels" and on January 17 ordered the dissolution of the Fourth Route Army, which still comprised some 90,000 troops north of the Yangtze. The Chinese Communist party defied this order. It reconstituted its Central Revolutionary Military Committee at Yen-an in northern Shansi, disbanded in 1937 as part of the Kuomintang-Communist united front agreement against Japan. The new committee issued a manifesto setting forth 12 conditions as the price of its further cooperation with the Chungking Government. Among its demands were revocation of the order disbanding the Fourth Route Army, release of prisoners and arms captured at Maolin, compensation for families of the

Communist soldiers killed and wounded, punishment of those responsible for the attack, immediate release of political prisoners held by the Chungking Government, and abolition of the Kuomintang dictatorship.

Ignoring these demands, the Chungking authorities ordered some 200,000 troops under Gen. Tang En-po to surround and capture the Fourth Army units north of the Yangtze. The Communists sent reinforcements from their Eighth Route Army in Shantung to aid the Fourth Army. When a large-scale civil war seemed imminent, the Japanese on January 23 suddenly launched their offensive against General Tang's troops guarding the Peiping-Hankow railway in southern Honan. The attack was thrown back by the Chungking troops after severe fighting with the aid of the Fourth Army, which attacked the Japanese rear. This action relaxed the Kuomintang-Communist tension and led Chiang Kai-shek to open negotiations with the Yen-an Committee.

However, when the second People's Political Council met in Chungking, March 1-10, the seven Communist delegates boycotted the sessions. Addressing the Council on March 6, Chiang Kai-shek rejected most of the demands made by the Yen-an Committee. He said there could be only one "source of command" and that the Government would not recognize "anomalous political organizations." However he said he intended to democratize the political system and had no intention of waging war on the Communists. The Communists were given one representative on the standing committee established by the People's Political Council March 10. The Communist-Kuomintang breach remained unhealed, however, and only the objections of some Chungking generals prevented War Minister Ho Ying-chin from launching a general offensive in April against the Eighth Route Army and the Communist-ruled Border Region in Kansu and Shensi.

The Japanese strove to widen the Kuomintang-Communist breach. Their offensive of May-June in Shansi was directed exclusively against troops of the Chungking Government. Despite their political differences, the Communist armies in Shansi, Hopei, and Suiyuan were reported to have lent invaluable aid to the Chungking forces by attacking the Japanese lines of communication. In July, however, the National Military Council at Chungking again charged the Communists with attacking its troops in Shansi and Shantung. In the same month Communist sources admitted that units of the Fourth Route Army were still operating and organizing in the region south of the Yangtze from which they were ordered to withdraw by the Central Government. Nevertheless, friction between the Kuomintang-Communist factions appeared to decrease during the remainder of the year, partly because of the outbreak of the Russo-German war and the new line adopted by the Communist International. See COMMUNISM.

Chungking's Other Problems. The Communist-Kuomintang breach was accompanied during 1941 by the extensive curtailment by Kuomintang officials of the democratic rights that prevailed in Free China during the first years of the struggle with Japan. Other factors contributing to this illiberal trend were growing financial and economic hardships, the spread of inflation, food hoarding and profiteering, the activities of "a not altogether negligible fringe of 'Quislings' and traitors," to quote Madame Sun Yat-sen; and other strains arising from the war. The censorship was tightened. Hundreds of liberals and Communists were arrested and scores executed, often without trial.

In his speech opening the 10-day session of the Kuomintang Central Executive Committee on March 25, Chiang Kai-shek declared "the economic difficulties are now 70 per cent and the military difficulties 30 per cent of the war problems now facing the nation." To deal with these problems the committee approved the creation of the new Ministries of Food, Trade, and Social Welfare, and adopted a three-year program for wartime reconstruction. Government monopolies were established over salt, sugar, tobacco, and wine. The collection of land taxes, under provincial control since 1928, was returned to the Central Government. The budget for mass education was increased and autonomy in local matters extended to Mongols, Tibetans, and other border minority groups. At the same time Foreign Minister Wang Chung-hui was replaced by Dr. Quo Tui-chi, Chinese Ambassador to London. The new Minister of Social Welfare assumed supervision of the fast-growing industrial cooperative movement. It undertook to bring other popular organizations, including farm and labor groups, under its control. In June the National Financial Conference increased land taxes five to 15 fold and revived the ancient system of collecting land taxes in kind in order to feed the army and the State civilian employees.

Foreign Relations. On January 23 President Roosevelt sent Lauchlin Currie, one of his administrative assistants, to Chungking to study China's economic situation with a view to the employment of the \$50,000,000 credit granted China by the U.S. Treasury Nov. 30, 1940. Following Currie's return to Washington, an agreement for monetary cooperation between the United States and China was signed in Washington April 25. It provided for establishment by China of a dollar-yuan stabilization fund consisting in part of dollars acquired from the United States and of \$20,000,000 U.S. contributed by Chinese Government banks. At the same time it was announced that China had entered into a similar stabilization accord with the British Treasury, which contributed £5,000,000 toward the pound-yuan stabilization fund in addition to the £5,000,000 fund established in 1939. Both funds were to be managed by a five-man board of three Chinese, one American, and one Briton.

On May 27 Chungking announced that the United States had agreed to supply lend-lease aid valued at nearly \$100,000,000 in the form of airplanes, trucks, guns, shells, power plants, steel, and other equipment. Secretary of State Hull followed this on May 31 with a note to the Chinese Foreign Minister stating that the U.S. Government "expects when conditions of peace again prevail to move rapidly, by process of orderly negotiations and agreement with the Chinese Government, toward relinquishment of the last of certain rights of a special character which this country, together with other countries, has long possessed in China by virtue of agreements providing for extraterritorial jurisdiction and related practices."

On recommendation of President Roosevelt, Chiang Kai-shek late in June appointed Owen Lattimore, American authority on the Far East, as special political adviser to the Chungking Government. The \$50,000,000 U.S. stabilization credit to China was extended for another year on July 2. In mid-July three American highway transportation experts arrived in Chungking via the Burma Road and submitted recommendations which proved effective in expanding and speeding up the traffic in military supplies over that highway. On August 16, Washington announced that 16 American public

health experts and sanitary engineers would be sent to China on lend-lease funds to fight disease among 250,000 Chinese workmen constructing a railway paralleling the Burma Road. Ten days later President Roosevelt announced the appointment of a military mission headed by Brig. Gen. John Magruder to arrange for increased lend-lease aid and to assist and advise the Chinese Army.

By November important American lend-lease aid was reaching the Chungking Government. One hundred U.S. army pilots were instructing Chinese airmen in China and a number of Chinese air cadets were being trained in the United States.

The aid received from America was duplicated, on a smaller scale, by the British measures in support of China. On July 14, the British promised to negotiate for the abandonment of extraterritorial rights in China when peace was obtained. On July 28, London joined the United States in freezing all Chinese assets in British territories at the request of the Chungking Government, thus helping to stabilize the yuan. A British military mission was sent to Chungking.

The Chungking regime opened diplomatic relations with Canada and Australia through an exchange of Ministers, and joined in the political and military conferences that led to the formation of a united front by the United States, Britain, China, the Netherlands Indies, Australia, New Zealand, and Canada against further Japanese aggression.

War with the Axis. During the critical American-Japanese negotiations in Washington in November, Chiang Kai-shek was reported to have warned President Roosevelt that any cessation of American aid to China would promote a Chungking peace agreement with Tokyo. The American response was seen in the arrival in South China in December of an all-American air unit, under the Chinese flag, for the defense of the Burma Road against Japanese bombing attacks. After Japan's surprise attacks upon the United States and Britain, the Chungking Government on December 9 formally declared war on Germany, Italy, and Japan. Plans for joint military cooperation of the anti-Axis powers in the Far East were formulated at a conference between Chiang Kai-shek, Gen. Sir Archibald P. Wavell of Britain, and Major Gen. George H. Brett of the U.S. Army Air Corps, held in Chungking at the end of December. At the same time T. V. Soong, Chinese Ambassador to Washington was appointed Foreign Minister to facilitate China's collaboration with the Anglo-American front.

On July 1 Chungking was thrown more definitely into the anti-Axis camp when Japan announced that Germany, Italy, Slovakia, Rumania, and Croatia had recognized Wang Ching-wei's puppet government in Nanking. Spain and Bulgaria also were reported to have extended recognition. The Chungking authorities immediately broke off diplomatic relations with the Axis powers and forced their news agencies to suspend activity in Free China.

The Nanking Regime. Despite recognition by the Axis countries, Wang Ching-wei made no important progress during 1941 in stabilizing his Japanese-controlled administration. In May he was reported to have threatened to resign unless the Japanese transferred their control of commerce and finance in the Yangtze valley to his government, provided his army of 140,000 with arms and munitions, and obtained Axis recognition. In the latter part of June Wang Ching-wei visited Japan as the guest of Emperor Hirohito. He pledged his collaboration with Japan and the European Axis powers in constructing a "new world order," and agreed upon a specific program of cooperation with Japan. In re-

turn, Japan agreed to extend his government a loan of 300,000,000 yen to equip and maintain the Nanking army.

In November the Japanese turned over to Wang's government the properties and interests of third powers in and around Nanking which had been under Tokyo's control since 1937. Meanwhile foreign observers reported difficulties within the Nanking regime, which caused Wang to reshuffle his Cabinet in August. Desertions of Wang's troops to Chungking were reported from time to time. Chungking claimed on September 15 that 30,000 of Wang's soldiers had mutinied in Honan, killed their Japanese officers, and switched their allegiance to Chiang Kai-shek. On the other hand, some Chungking officers and troops were reported to have gone over to Wang.

Fate of Shanghai. The position of the International Settlement at Shanghai became increasingly difficult. On February 1 the Chinese municipality and the Council of the International Settlement signed an agreement for policing the western border areas within and adjoining the Settlement. A meeting of Settlement's taxpayers on April 17 changed the membership of the Municipal Council to include three Americans, three Britons, three Japanese, four Chinese, one German, one Swiss, and one Netherlander.

Nevertheless hostility, marked by frequent terrorist outbreaks, continued to mark the relations between Chinese and Japanese, and between Japanese and foreigners (especially the British and Americans). Agents of the Chungking and Nanking regimes waged underground war upon each other. There were bombing outrages in Chungking- and Nanking-controlled banks in April. The soaring cost of living and an acute shortage of food and fuel caused repeated strikes and riots among native workers. Several thousand unemployed German Nazi refugees flocked to Shanghai from all parts of the anti-Axis world, adding to racial tensions. Late in July the development of economic warfare between Japan and the Anglo-American-Dutch territories proved a further blow to Shanghai's dwindling foreign trade and spurred Japanese army officers to demand the seizure of the entire International Settlement. The withdrawal of the American marines from Shanghai late in November enabled Japanese troops to occupy the Settlement area without difficulty coincident with the attack upon Pearl Harbor. In doing so they sank a British gunboat and captured the American gunboat *Wake*.

See AUSTRALIA, GREAT BRITAIN, JAPAN, and MONGOLIA, under *History*; UNITED STATES under *Foreign Affairs*; CHEMISTRY, INDUSTRIAL; COMMUNISM; FAIRS, EXPOSITIONS, and CELEBRATIONS; FASCISM; FASHION EVENTS; LEND-LEASE ADMINISTRATION; REFUGEES; TUNGSTEN; WORLD WAR.

CHLORINE. See CHEMISTRY, INDUSTRIAL; PAPER AND PULP.

CHOSEN. See KOREA.

CHRISTIAN CHURCHES. See DISCIPLES OF CHRIST.

CHRISTIAN REFORMED CHURCH. See REFORMED CHURCH, RELIGIOUS ORGANIZATIONS.

CHRISTIAN SCIENCE. A system of metaphysical or spiritual healing, discovered by Mrs. Mary Baker Eddy in 1866 and set forth in her textbook of the Movement, *Science and Health with Key to the Scriptures*, first published in 1875. The first church was established by Mrs. Eddy in Boston in 1879. In 1892 it was reorganized as a voluntary religious association, known as The First Church of Christ, Scientist, in Boston, but called more frequently by

its adherents "The Mother Church." The total number of recognized branches of The Mother Church in the United States reported for the fiscal year ending May 31, 1940, was 2,190, and 74 college and university organizations. Total branches for the world 2,863.

The affairs of The Mother Church are administered by a board of directors which supervises the work of the board of education, board of lectureship, and committee on publication. The board of education instructs and authorizes students to teach Christian Science. The board of lectureship consists of 22 members who are engaged in delivering free lectures on Christian Science.

The Christian Science Publishing Society, whose affairs are administered by a board of trustees according to the Manual of the church, issues the daily paper of the organization, *The Christian Science Monitor*. Other periodicals include *The Christian Science Journal*, *Christian Science Sentinel*, *Christian Science Quarterly*, and four editions of *The Herald of Christian Science* in the German, French, Dutch, and Scandinavian languages, each with the English translation opposite, and in Braille.

John Randall Dunn is president of The Mother Church for the year 1941-42. Headquarters are at 107 Falmouth Street, Boston, Mass. See GERMANY under *History*.

CHROME, CHROMITE. See CHROMIUM.

CHROMIUM. The second World War took the "stainless" out of steel, as the demand for chromium continued to increase in 1941. Rising steel production made devouring demands on this vital alloying metal in 1940, and it was put under export-license control by government order late in that year. Early in 1941 it was known that other alloy steels would have to be substituted for stainless steels wherever possible, and "stainless" was removed from many specifications.

Germany had access in 1941 to all the chrome ore produced in Yugoslavia and Greece, or about 10 per cent of the world's supply. Turkey, which produces about 17 per cent of the world's total, continued to fend off with success Germany's bullying negotiations for her output, and continued to fulfill her export contracts to Great Britain and the United States. Russia, who produces 15 per cent of the world's chrome ore, exported none in 1940 or '41.

The United States formerly depended almost entirely on the outside world for its chromium supply. Africa, India, New Caledonia, the Philippines, and Cuba together produce about 55 per cent of all chrome ores in the world. United States domestic production has always been very small in comparison. Only about 3,000 long tons per year (from California and Oregon) were the measure of United States output up to and including 1940.

Chromium is used to toughen steel and therefore is among the basic metals vital to war production. It goes into the linings of gun barrels and armor plate for tanks, airplanes, and ships. Huge amounts also are taken for the equipment used in industries essential to war, namely the chemical and petroleum industries. United States consumption of chromium, which was 800,000 tons in 1941, was estimated to become at least 900,000 tons in 1942.

None could possibly be available for nonessential uses. In July, 1941, the OPM put chromium under full priority control to conserve all available stocks for use in the defense program. In November, control over deliveries was intensified; the

manufacture and delivery of chrome steel was prohibited except under preference ratings of A-10 or higher. Chrome plate was prohibited for use on automobiles after December 15. In December all manufacturers of ferrochromium agreed to return to the specifications of 20 years ago, which made possible the use of lower grade ores. Engineering steels having a maximum of 3 per cent chromium only were affected by the change. No chromium or stainless steel could go to civilian uses except for electrical conduction and refrigeration, and these were ordered cut 50 per cent beginning January, 1942, and 75 per cent in February. A complete allocations system for chromium was put into effect by the WPB in February, 1942, specifying that no chromium whatever could be melted without authorization by the Director of Industrial Operations.

The difficulties and increasing hazards of shipping, the cessation of imports from certain sources, added to apprehension that all foreign supplies might become unavailable, plus the ever increasing demand, stimulated United States production in 1941 to an unprecedented 12,000 long tons (3,000 in 1940). The Pilliken mine in California was the largest producer, but altogether 25 operations in California and Oregon were busy through the year. New deposits were discovered in Montana, Washington, Alaska, and Wyoming, which were reported suitable for refractory and chemical uses.

In spite of all obstacles, however, imports during the first nine months of 1941 amounted to 660,936 long tons compared with 657,689 for all of 1940. The increase was due to purchases from Cuba, Africa, and the Philippine Islands, but some amounts also arrived from Turkey and New Caledonia. As early as July, 1941, all ores from the Transvaal and India were sold out beyond the end of 1941. The Metals Reserve Company was the principal buyer. The nation's stockpile, December, 1941, was 400,000 tons. And all imports of chromium were handled by the MRC after December 28. See GEOLOGICAL SURVEY; MINES, BUREAU OF.

CHRONOLOGY. The following chronology lists the more important happenings of the year 1941 according to the dates of occurrence. In most cases, these events are treated in detail under their respective headings. To such articles, particularly those on leading countries, such as UNITED STATES, GREAT BRITAIN, and the article WORLD WAR, the reader is referred for additional information. For a list of prominent persons who died during the past year, reference should be made to the article **NECROLOGY**.

JANUARY

- 1—R A F launched a series of bombing raids on Bremen and other war production centers.
- Neutral Eric was bombed, Irish Government protested to Germany, January 3.
- ASCAP music went off the air, following failure to agree with National Association of Broadeners.
- 2—New constitution of Panama went into effect.
- 3—Shipbuilding program called for 200 U S merchant vessels.
- 4—Government of French Indo-China was made autonomous.
- 5—British captured Bardia, Libya, and 25,000 Italians after a 20-day siege.
- Amy Johnson, serving as a pilot in the Air Transport Auxiliary, bailed out from an R A F. plane and was drowned.
- 6—President Roosevelt asked "all-out aid" for the democracies in his message to the new 77th Congress.
- 7—Office of Production Management was established by executive order to supervise defense output, William S. Knudsen, industrialist, and Sidney Hillman, labor leader, were given equal powers.
- 8—The Greeks opened an offensive in Albania, capturing Kluksa on January 10.
- President's budget envisaged expenditures of \$17,485,528,049 in fiscal 1942, including \$10,811,000,000 for defense.

U.S Navy was reorganized into Pacific, Atlantic, and Asiatic fleets with Adm. Husband E. Kimmel as commander-in-chief.

9—Harry L. Hopkins arrived in London as personal envoy of President Roosevelt.

10—Renewed Soviet-German trade treaty provided increased supplies of raw materials for Germany and established Polish Baltic frontier.

Axis bombers, launching Mediterranean attacks, damaged the British aircraft carrier *Illustrious*, a cruiser, and a destroyer.

The Lend-Lease bill was introduced in Congress, to provide supplies to any country whose defense is deemed necessary to that of the United States.

11—Germany decreed the death penalty for profiteering in wartime.

13—In Italian army shake up Gen Ugo Cavallero replaced Gen Ubaldo Soddu as commander in Albania.

14—Two were killed in New York City in a dramatic Fifth Avenue hold-up and gunchase by the Esposito brothers (convicted May 1).

15—Haile Selassie returned to Ethiopia to join British offensive against Italians.

Mayor Fiorello H. LaGuardia held the first New York City Defense Council meeting.

18—Thai flag was raised over Cambodia.

Joseph P. Kennedy, retiring ambassador to Britain, opposed surrender of Congressional authority in lend-lease bill, urged peace.

19—Axis made mass air attacks on Malta.

20—President Roosevelt was inaugurated for the first presidential third term in U S history.

Germany reported secret meeting between Hitler and Mussolini.

British invaded Eritrea.

21—Assassination of German army major in Bucharest precipitated a conflict between extremist faction of Rumanian Iron Guard and Premier Ion Antonescu; thou sands killed in four-day fighting.

Japan offered to mediate conflict between French Indo-China and Thailand, Vichy accepted the following day.

22—British captured Tobruk, 14,000 Italians captured.

A wave of big defense industry strikes began in United States with stoppage in Allis Chalmers.

Supreme Court Justice James Clark McReynolds retired (effective February 1).

23—Col Charles A Lindbergh, in committee hearings on Lend-Lease Bill, advocated a negotiated peace, said aid to Britain would only prolong war.

24—Marshal Henri Petain designated a National Council of 188 members in France, named committee to unify political parties (January 29).

New British Ambassador to Washington, Viscount Halifax, arrived on the battleship *King George V* and was met in person by President Roosevelt.

25—Premier Antonescu restored order in Rumania with aid of German troops, Vice Premier Hora Sima arrested as leader of outbreak, 7,000 subsequently arrested.

26—Wendell L. Willkie arrived in London for an unofficial ten-day visit, on his return, he advocated more aid for Britain.

Gen Francisco Franco put Spanish railroads under government control.

27—Italian Foreign Minister, Count Ciano, was sent to active duty on the front.

Hungarian Foreign Minister, Count Czaky, died.

28—Free French forces, advancing into Libya, defeated the Italians at Murzak and captured Gatrun (January 30).

Secretary of the Treasury Henry Morgenthau reported that British dollar resources in the United States were exhausted.

29—Greek dictator, Gen John Metaxas, died, succeeded by Alexander Korizis.

30—Hitler on the 8th anniversary of the founding of the Third Reich prophesied victory in 1941, warned that ships carrying aid to Britain would be sunk.

British captured Derna in Libyan campaign.

An armistice between French Indo-China and Thailand was signed at Saigon, peace conference opened in Tokyo February 7.

War Department rejected the lowest bid on a U S contract, submitted by Ford Motor Company, because it refused to accept labor provisions.

FEBRUARY

1—British captured Agordat in Eritrea.

President Anastasio Somoza pledged Nicaragua to cooperation with the United States.

3—Cuban army and navy chiefs who rebelled against civil rule were ousted, President Fulgencio Batista assumed command.

British captured Cirene, Libya.

U S Supreme Court upheld the Wage and Hour law.

Guy S. Swope was appointed Governor of Puerto Rico.

4—Italian Fascist party underwent a shake-up; 83 officials affected.

5—Belgian Government attached funds of the Bank of

France in New York to make good \$260,000,000 of its gold delivered by France to the Germans

6—British captured Bengasi, last important stronghold of Eastern Libya (abandoned it eight weeks later).

8—U. S. House passed Lend-Lease Bill, 260-165.

Malcolm MacDonald was appointed British High Commissioner to Canada

9—Adm. Jean Darlan became Vice Premier and Foreign Minister of France, succeeding Pierre Flandin.

British navy shelled Genoa

12—British severed diplomatic relations with Rumania
U. S. Senate confirmed nomination of John G. Winant as ambassador to Great Britain

17—Italy notified foreign diplomats not to leave Rome without permission

Dies Committee was extended for 15 months

12—General Franco conferred with Mussolini and (February 13) with Petain, agreement on food and supplies for Spain reported

Economic treaties affecting Argentina, Bolivia, and Paraguay implemented the agreements reached at the River Plate Conference.

Gen Gregory K. Zhukov was appointed Chief of the General Staff of the Russian Army

13—Yugoslav Premier and Foreign Minister were summoned to Berlin.

14—Adm Kichisaburo Nomura presented his credentials as new Japanese Ambassador to the United States

15—British drove the Italians from Kurmuk, last stronghold in Anglo-Egyptian Sudan.

16—Hurricane in Portugal and northern Spain cost hundreds of lives

17—Bulgaria and Turkey signed a non-aggression pact

Earl Browder lost his appeal to the Supreme Court against his four-year sentence for passport fraud (Robert Minor serves as acting head of U. S. Communist Party while Browder is in prison)

18—Japan offered to act as mediator to end war, Britain declined, February 24

19—Nomura stated that there would be war between Japan and the United States only if the United States began it

Bill was signed increasing United States national debt limit to \$65,000,000,000

ASCAP accepted a consent decree settling the U. S. Government's anti-trust suits against it

Costa Rica and Panama settle border dispute

21—Maxim Litvinov was expelled from the Central Committee of the Soviet Communist party

22—Nazi staff officers moved into Sofia, Bulgaria

23—United Press reported that 16 current strikes were holding up \$60,000,000 of U. S. defense orders

Nobel Prize winner, Sir Frederick Banting, was lost in a military airplane crash in Newfoundland

24—OPM invoked the first mandatory industry-wide priorities, affecting aluminum and machine tools

25—Brazil banned foreign-language newspapers and instituted export licenses

26—Successful two month drive into Italian Somaliland culminated in British capture of the capital, Mogadiscio, all Italians driven out by March 7

Amsterdam was subjected to martial law by the Germans as a result of riots and disorders; 15,000,000-guilder fine imposed March 2

U. S. S. R. and Rumania signed a trade agreement

CIO went on strike at Bethlehem Steel, OPM peace formula, accepted after 39 hours, was acclaimed by CIO as its greatest victory in history

27—Rep William D. Byron of Maryland and six others were killed in crash of an Eastern Airliner near Atlanta, Ga

28—Anglo-Turkish pact was reaffirmed after Ankara conference with British Foreign Secretary Anthony Eden, Chief of Staff Sir John Dill, and Ambassador to Moscow Sir Stafford Cripps.

The Churchill Government received a unanimous vote of confidence in the House of Commons

Alfonso XIII, exiled ex-king of Spain, died in Rome

MARCH

1—Bulgaria became the seventh adherent to the Axis tripartite pact, Nazis occupied strategic Bulgarian bases
U. S. Senate approved an investigation of defense contracts

Gen. Shunroku Hata became Japanese commander-in-chief in China

2—Turkey closed the Dardanelles except to ships having permits

Leftist parties prevailed in Chilean Congressional elections

3—German troops occupying Bulgaria reached Greek frontier, U. S. S. R. condemned yielding to Axis; United States froze Bulgarian credits

4—German special mission arrived in Turkey

5—Britain severed diplomatic relations with Bulgaria as the German war machine poured through.

Greece rejected German demand that she make peace with Italy, Eden and Dill, in Athens, promised full aid from Britain

6—Ex-King Carol escaped with Magda Lupescu from Spain to Portugal, obtained permission to reside in Chile, March 25.

United States requested closing of Italian consulates in Newark and Detroit as counter to Italian closure of U. S. consulates

7—Mexico pledged aid to any American nation defending itself.

Britain refused to let the Red Cross carry food through the blockade to unoccupied France.

8—Senate passed the Lend Lease bill, 60-31 (signed March 11). Vichy Government drafted labor for agriculture

10—Twelve firemen were killed, 20 hurt, in burning theater in Brockton, Mass

17—French Indo-China ceded disputed areas (approximately 25,000 square miles) to Thailand under Japanese mediation, peace treaty signed at Tokyo, May 9, with Japanese guaranty of new borders

12—U. S. S. R. and Thailand established diplomatic relations
Plebiscite in Rumania endorsed Antonescu's regime

16—Britain announced drafting of girls 20 and 21 and men of 41 to 45 for war industries, recaptured Berbera, British Somaliland

Sabotaged rails caused a wreck on the Pennsylvania Railroad near Baden, Pa., killing four and injuring 50

17—National Gallery of Art was dedicated in Washington, D. C.

19—A National Defense Mediation Board was created to act in labor disputes in defense industries, Clarence A. Dykstra, chairman

United States and Canada signed an agreement for development of the St Lawrence Seaway and power project

Nationalist members of the Uruguayan Cabinet resigned

20—Belgrade rumored British landings in Greece (news censored by British until April 6)

21—Three Yugoslav Cabinet members, resigned in opposition to proposed pact with Axis, anti-Nazi rallies followed

Jarabub, last Italian post in Cyrenaica, was captured
President Manuel Quezon appointed an Emergency Board as Philippine Commonwealth assumed full responsibility for defense

22—Operation of Grand Coulee Dam began, two years ahead of schedule

24—A Turkish-Soviet communique promised neutrality in case either country should be attacked

Violence accompanied new CIO strike at Bethlehem Steel, strike ended March 28

Japanese Foreign Minister Yosuke Matsuoka conferred with Stalin, went to Berlin, March 27, and Rome, April 1

25—Yugoslav Government signed protocol adhering to Axis, disension spread, United States froze Yugoslav credits

Germany extended war zone to within three miles of Greenland, including Iceland

A score of A. F. L. workers, were injured in effort to break CIO strike at International Harvester Co. in Chicago, strike submitted to NIDMB, March 30

Marshal Rodolfo Graziani retired from Italian command in Libya

26—Martial law was proclaimed in Syria, following Arab uprising

Cheren, Eritrea, surrendered to British

27—Anti-Nazi coup under Gen Dusan Simovich overthrew Yugoslav regency and put young King Peter II on the throne. Premier Cvetkovich, Prince Paul, and the Foreign Minister arrested, new Government prepared for war with Germany, Britain pledging aid

\$7,000,000,000 appropriation for lend-lease aid was signed

28—In Battle of Cape Matapan, off Greece, Italy lost three cruisers and two destroyers, battleship also crippled

30—United States seized Axis ships in United States ports, alleging sabotage, 28 were Italian, 2 German, and 36 Danish

31—CIO contract with soft-coal operators expired, 400,000 stopped work, four killed in Harlan disorders (April 2).

APRIL

1—Asmara, Eritrea, capitulated to the British
United States-Mexican agreement provided for reciprocal use of air fields

2—CIO called a strike in the River Rouge plant of the Ford Motor Co, affecting 85,000 workers, the company closed the plant after rioting in which 150 were injured, the strike ended (April 11) when the Ford company entered its first agreement with a union

Italian efforts to mediate German-Yugoslav dispute collapsed

3—A pro-Nazi coup in Iraq established Rashid Ali Al-Gallani as Premier.

Croat leader, Vladimir Matchek, joined Simovich Government in Yugoslavia.

Count Paul Teleki, Hungarian Premier, committed suicide, succeeded by Ladislau de Bardossy.

British evacuated Bengasi.
 United States requested recall of Italian naval attaché, Adm. **Alberto Lais**, connected with Axis ship sabotage in United States ports
 5—Yugoslavia and Russia signed a nonaggression pact
 Colombia and Venezuela defined frontier after 100-year dispute
 6—German Army crossed Greece's Bulgarian frontier at 5 15 a m and launched a large-scale attack on Yugoslavia and Greece. Germany and Italy declared war on Yugoslavia; Rumania mobilized; R A F. bombed German troops at Sofia and Hungarian points
 Addis Ababa, capital of Ethiopia, yielded to British NDMB ended 75-day Alisa-Chalmers strike with agreement to negotiate wage increases.
 7—Yugoslav troops attacked and occupied Scutari, Albania
 Britain and Greece broke off diplomatic relations with Hungary
 British income tax was raised to 50 per cent.
 8—Germany occupied Thrace without resistance. Mexico expropriated 12 Axis ships.
 Axis recaptured Derna, Libya
 Britain, Netherlands, and the United States conferred in Manila on Pacific defense
 9—United States negotiated an agreement for the protection of Greenland through the Danish Minister to Washington (repudiated by the German-controlled Danish Government, April 12)
 Salonika fell to the Germans, trapping the Greek Eastern Army
 British announced capture of the Red Sea port, Massaua.
 United States 35,000 ton battleship *North Carolina* was commissioned in the Brooklyn Navy Yard, first of its class completed in 18 years
 10—A presidential proclamation modified the Red Sea combat zone, opening area to American shipping
 11—Office of Price Administration and Civilian Supply (OPACS) was set up under **Leon Henderson** to recommend United States price control measures
 12—Axis recaptured Bardia
 Russia protested Hungarian troop movements into Yugoslavia.
 13—Japan and USSR signed a five-year neutrality pact, including a declaration regarding frontiers of Manchukuo.
 Germans claimed Belgrade; laid siege to Tobruk
 14—United States steel industry granted wage increases of ten cents an hour to avert strikes.
 Attempted Sing Sing prison break caused 3 deaths
 15—Bulgaria severed diplomatic relations with Yugoslavia
 Germany and Italy recognized the puppet state of Croatia
 16—London underwent the worst air raid of the war (followed by similar attack on April 19)
 OPACS froze United States steel prices at levels prevailing in the first quarter of 1941
 17—Yugoslav army surrendered
 United States auto industry agreed to reduce production 20 per cent, effective August 1
Joseph M. Schenck, Chairman of the Board of Twentieth Century-Fox, was found guilty of income tax evasion
 18—In Ontario, 28 Nazis broke from a prison camp, 16 captured and three dead, April 20
 Greek Premier **Korizis** died suddenly, **Kostas Kotzias** succeeded
 19—British landed a force at Basra, Iraq
 20—Germany claimed Olympus and Larissa; British-Greek forces retreated
 Serious forest fires spread in 11 eastern States, 78,000 acres burned over in New Jersey
 21—Roosevelt appeal and formula for settlement of soft-coal strike was accepted by northern operators, rejected by southern; strike, turned over to NDMB, was settled (April 28) when southern operators agreed to a dollar a day wage increase and negotiation of a new agreement
 United States-Canadian agreement provided for exchange of war supplies
 British battleships shelled Tripoli
 Two Red Cross relief ships to Greece were declared missing
 22—Main Greek Army of Epirus surrendered to Italians at 9 30 p m
 American reinforcements landed in the Philippines.
 23—British and Greek troops made a last stand just north of Athens, King **George II** and the government fled to Crete; Greece severed diplomatic relations with Bulgaria, following invasion by latter
Lindbergh addressed a New York rally of the America First Committee, opposing war
 24—Germans captured Pass of Thermopylae by enveloping attack.
 25—President **Roosevelt** announced that the U.S. Navy would patrol the seas as far out as was necessary to prevent aggression; compared **Lindbergh**, in his press con-

ference, to a Civil War copperhead (**Lindbergh**, as a result, resigned his commission in the U.S. Army).
 26—All-India Congress modified demand for immediate independence
 27—Nazis occupied Athens at 10 a m after a three-week Balkan campaign, harassed British attempting to evacuate Greece
 28—Greek credits in the United States were frozen
 Gen **Isaias Medina** was elected President of Venezuela.
 30—Secretary of the Navy **Frank Knox** revealed that "quite a batch" of navy fliers were being sent to Britain for observation purposes.

MAY

1—U.S. Defense Savings Bonds and Stamps were put on sale.
 U.S. Maritime Commission diverted 50 oil tankers to Britain
 Britain announced that 80 per cent of the B.E.F. in Greece (estimated at 60,000 men) was safely withdrawn; heavy equipment lost
 2—Fighting broke out in Iraq between British and German-supported Iraqi troops; British airport at Habbaniyah attacked
 U.S. Army sent pilots to Britain to serve as observers in all types of planes.
 3—FOC by a 5-to-2 vote ordered NBC to divest itself of one of its two networks and limited network contracts to avoid monopoly.
 4—British bombed Baghdad airport and other bases
 6—**Joseph Stalin** became Soviet Premier, replacing **Vyacheslav M. Molotov** who kept the office of Foreign Commissar
 Anti-Nazi refugee editor, Dr. **Heinrich Simon**, was murdered in Washington, D C
Halle Selassie returned to Addis Ababa
 8—Ten Latin American naval chiefs began tour of United States naval establishments as guests of Navy Dept
 9—R A F attacked Germany with 400 planes; Germany retaliated the following night, scoring hits on Westminster Abbey, the House of Commons, the British Museum, and five hospitals
 10—**Rudolf Hess**, third-ranking German leader, flew to Scotland alone in a Messerschmitt 110, bailed out, and was captured
 British admitted loss of 6,000,000 tons of shipping during war
 11—M B S and A S C A P signed agreement contract
 14—Germany proclaimed northern part of the Red Sea a zone of military operations.
 Restoration of the monarchy was proclaimed in Croatia, crown was offered to Italian Prince, December 18
 15—**Pétain** announced a new program of collaboration with Germany; President **Roosevelt** appealed to the French people against collaboration
 French ships in American harbors, including the *Normandie*, were taken into protective custody.
 British Foreign Secretary **Eden** warned that German planes were using bases in Syria
 Bolivia expropriated a German air line
 16—Iceland severed union with Denmark
 Russia and Iraq established diplomatic relations
 General Motors granted a ten cents-an-hour wage increase to avert strikes, C.I.O. waived closed shop
 17—FBI held 40 in national round-up of unregistered aliens
 One-day anthracite strike won wage increase of 7½ to 10 per cent.
 German planes bombed British in Iraq.
 18—French High Commissioner, Gen. **Henri Fernand Dentz**, announced Syria would resist the British
 United States celebrated "I am an American Day."
 19—British advancing on Baghdad captured Euphrates bridge
 20—Germany launched an attack on Crete with parachutists.
 Duke of **Aosta**, Italian Viceroy, surrendered in Ethiopia with 38,000 men
 Three hundred twelve survivors from the Egyptian steamer *Zamaam* (sunk by a German warship in April) landed in France; 140 Americans were on board
 Chile arrested 22 members of the (Nazi) Popular Socialist Vanguard.
 Diving naval plane decapitated a woman in Alabama; two fliers sentenced to one and two years imprisonment each.
 Office of Civilian Defense was established under Mayor **LaGuardia** of New York
 21—American freighter *Robin Moor* was sunk by a German submarine in the south Atlantic; 35 survivors picked up after 13 days and 11 others after 19 days in mid-ocean
 Germany requested that foreign diplomats be withdrawn from Paris
 22—R A F withdrew from Crete because of inability to protect airports.
 23—King **George II** fled from Crete to Egypt.
 24—British battle cruiser *Hood* was sunk by the *Bismarck* in Denmark Strait with loss of 1,300 or more men.

Emir Abdul Tlah, Regent of Iraq, returned under British protection to set up a new government.
King Victor Emmanuel and Albanian Premier **Sheuket Verlaci** were shot at in Albania by a Greek
 26—Farm bill was signed approving crop loans up to 85 per cent of parity.
 27—President Roosevelt proclaimed unlimited national emergency.
 German battleship **Bismarck** was destroyed after a 1,750-mile chase by British ships and planes.
 British admitted loss of two cruisers and four destroyers with other ships damaged off Crete
 United States agreed on lend-lease aid to China
 28—Germans captured Candia, capital of Crete
 29—Germans captured Candia and Suda Bay, Crete
 Secretary of the Interior **Harold Ickes** warned of a gasoline shortage in the east, he was named Petroleum Coordinator for National Defense, May 31.
 U.S. immigration officials arrested Dr **Kurt H. Rieth**, former German minister to Austria, in round-up of aliens violating immigration laws
 Philippines curbed exports to Japan
 30—Premier **Eashid Ali** fled to Iran, British reached outskirts of Baghdad
 New Jersey closed the German-American Bund camp "Nordland" charging violation of law.
 31—British-Iraqi armistice ended rebellion, restoring pro-British regent
 Waterfront fire in Jersey City, N J., caused \$25,000,000 loss.

JUNE

1—British abandoned Crete after 12-day defense, evacuated 17,000, lost 15,000 in killed, wounded, missing, and captured
 Rationing of all clothing was inaugurated in Great Britain
 2—**Hitler** and **Mussolini** conferred at Brenner Pass
 Mandatory priorities bill was signed
 Vichy adopted new anti-semitic legislation
 4—Former German Kaiser died at Doorn
 British occupied Mosul oil fields
 Egypt severed relations with Syria; Cabinet fell
 6—The Ship Seizure bill was signed; authorized requisitioning of foreign merchant ships idle in U.S. ports
 A.F.L. ousted three Communist-controlled teachers' unions.
 7—Axis attacked Alexandria naval base for the second time.
 Whirlaway won the Belmont stakes, becoming the fifth horse to take the "triple crown"
 8—British and Free French forces invaded Syria at 2 a.m.; Pétain asked French in the Near East to resist.
 9—U. S. War Department took over the North American Aviation Co at Inglewood, Calif., where a striking C.I.O. local jeopardized the defense program, control was returned to owners (July 2) after mediation
 Mayor **LaGuardia** ordered formation of an Air Raid Warden Service of 60,000 in New York City.
 10—**Charles Workman**, murderer of Dutch Schultz in 1935, was sentenced to life imprisonment
 11—First lend-lease report showed allocations of \$4,277,412,879, actual shipments of \$75,202,425, in 90 days
 Japan's trade negotiations with Netherlands Indies ended in deadlock
 Bolivian Cabinet resigned in connection with Nazi revolt plot.
 12—Justice **Harlan Fiske Stone** was nominated to succeed **Charles Evans Hughes**, retiring as U.S. Chief Justice. Sen. **James Francis Byrnes** and Atty Gen **Robert H. Jackson** were nominated as associate justices
 14—All Axis assets in the United States were frozen, Italy and Germany retaliated the following day.
 15—Croatia signed Axis protocol.
 16—United States ordered all German consulates closed, charging improper activities by officials (Axis closed U.S. consulates and American Express offices on June 19.) R.A.F. opened a series of heavy attacks on German bases
 17—German nationals were prohibited from leaving the United States
 Australia outlawed strikes in war industries
 18—Turkey and Germany signed a ten-year friendship pact.
 German ultimatum to Russia was rumored
 Britain began to recruit a Civilian Technical Corps in United States
 Plan to arm American freighters was revealed.
Joe Louis successfully defended the world's heavyweight championship for the 18th time, knocking out **Billy Conn** in the 13th
 19—OPM put rubber under priorities control
 20—Petroleum products were put under the United States export licensing system.
 Ford-C.I.O. contract granted all union demands.
 United States submarine **O-9** sank 24 miles east of Portsmouth, N.H.; 88 lost.
 Finland mobilized

21—Damascus fell to British and Free French troops. **William H. Davis** became chairman of NDMB
 22—Germany invaded Russia on a 2,000-mile front; proclamation and declaration of war were read by **Paul Joseph Goebbels** and **Joachim von Ribbentrop** at 5:20 a.m. Italy declared war on Russia, Slovakia severed diplomatic relations, Rumanians entered Bessarabia.
Pat Harrison, president pro tem of the U.S. Senate, died
 23—Italians were barred from leaving United States, Italy retaliated, June 24.
 24—United States pledged aid to Russia, releasing frozen credits of \$40,000,000
 Lithuanian revolt aided Germans to capture Kaunas, Lithuanian capital, from Russians
 25—Turkey and Sweden proclaimed neutrality in Russo-German war.
 26—Finland proclaimed a defensive war against Russia
 27—Hungary declared war on Russia; Denmark severed diplomatic relations with U.S.S.R.
 British military mission arrived in Moscow
 The world's largest bombing plane, the **B-19**, made its first test flight on the Pacific Coast
 28—Albania announced a state of war with Russia
 Congress sent to the White House the largest single appropriations bill in history, \$10,384,821,624 for the Army
 29—Nazis claimed to have reached the Minsk area
 Executive order authorized drafting of 900,000 more men up to June 30, 1942
 Lord **Beaverbrook** became British Minister of Supply.
Jan Ignace Paderewski died
 30—Vichy severed diplomatic relations with Russia
 Russians admitted loss of Lwow
 Congress passed six supply bills, bringing appropriations for fiscal 1942 to \$33,310,870,190
 President Roosevelt dedicated Hyde Park Library

JULY

1—Axis countries recognized Japanese-sponsored **Wang Ching-wei** regime in China, Chungking Government severed relations, July 2
 Gen Sir **Archibald Percival Wavell**, British Commander-in-Chief in the Middle East, was replaced by Gen Sir **Claude Eyre Auchinleck**; Wavell was assigned to India
 Second United States draft registration was held for 750,000 who had reached age of 21
 3—Stalin called on Russian people for a "scorched earth" policy
 Finland invaded Russian territory
 Tadmur in central Syria fell to British and Free French after a 13-day siege
 Denmark requested evacuation of U.S. consulates
 Warden **Lewis E. Lawes** of Sing Sing prison resigned
 4—Italian commander in Ethiopia, Gen **Pietro Gazzero**, surrendered; surrender of nine other Italian Generals was announced July 6
 5—Border fighting broke out between Peru and Ecuador, truce agreed on, July 26.
 6—Germans claimed Minsk
 7—United States naval forces occupied Iceland at invitation of Icelandic Government to forestall German occupation U.S. Army units landed, September 17
 8—**Richard Whitney**, former president of N.Y. Stock Exchange, was paroled after serving 3 years and 3 months for grand larceny.
 9—Vichy authorized Gen. **Henri Dentz** to ask for an armistice in Syria; fighting ended July 12, armistice signed July 14
Willkie lunched with the President, supported Iceland occupation
 Trading on N.Y. Stock Exchange exceeded one million shares for second consecutive day
 R.A.F. reported 24-hour-a-day offensives on Continent
 10—A speech by isolationist Sen **Burton K. Wheeler** was cancelled in Atlanta, Ga., after officials refused use of municipal auditorium
 11—United States issued a blacklist of Axis-connected firms in Latin America; their United States assets were frozen, July 17.
William J. Donovan became Coordinator of Defense Information
Friedrich Ernst Auhagen, organizer of American Fellowship Forum, was convicted as a German agent; sentence was eight months to two years.
 12—Britain and Russia signed a mutual-assistance agreement at Moscow, each agreed not to conclude a separate peace
 14—Churchill claimed air equality with Germany.
 16—**Joe Di Maggio**, Yankee baseball star, scored a hit in his 56th consecutive game
 17—Russians announced Germans had reached the Smolensk area; political commissars were restored in the Red Army
Harry Hopkins, lend-lease supervisor, attended a British Cabinet meeting
 Gen **George C. Marshall** revealed United States financing of air facilities in Brazil.
Lindbergh wrote to President **Roosevelt**, asking an apology from Secretary **Ickes** for accusations against him.

18—Japanese premier, Prince **Fumimaro Konoye**, reformed Cabinet; Axis alliance reaffirmed, July 19

19—Great Britain formally launched the "V for Victory" drive among captured peoples

Bolivia proclaimed a state of siege and rounded up pro-Nazi elements, German Minister was declared *persona non grata*

21—President requested retention of selectees beyond one year in special message to Congress.

23—France accepted Japanese demands for military control over French Indo-China, agreement signed July 26 gave Japan 8 air bases and 5 garrison posts. Japanese occupied Cam Ranh naval base, July 29.

Germany admitted Moscow drive was slowed

Four United States newspaper executives defied subpoena to appear for an FCC investigation

24—A F L building unions entered no-strike agreement with OPM for duration of emergency.

25—United States ended its appeasement policy in the Far East, freezing Japanese assets

26—Britain froze Japanese assets and prepared to denounce commercial agreements, Japan froze American, British, and Philippine assets

OPM froze stocks of raw silk and OPACS fixed prices, with Japanese supply cut off

Philippine forces were put under United States command for the duration of the emergency, Gen **Douglas MacArthur** was put in command

A Soviet military mission arrived in the United States

Marx Dormoy, Socialist leader, was killed at Vichy by a time bomb

28—Netherlands Indies suspended oil agreement with Japan and empowered Army to invoke emergency laws, Indies, Australia, and New Zealand froze Japanese assets

Finland severed relations with Great Britain

Secretary **Knox** reported that the U.S. Navy used a depth bomb off Greenland in self-defense only

Chungking, constant air-raid victim, was bombed for eight hours

29—Russians counter-attacked

Churchill declared in the House of Commons that the United States was advancing "to the very verge of war"

Secretary of War **Stimson** apologized to Senator **Wheeler** for charge of circularizing soldiers to resist military training

30—United States protested Japanese bombing of United States gunboat *Tuluda* at Chungking; Japan apologized and offered repayment

United States recognized Czech Government-in-Exile

Polish Government-in-Exile signed an agreement of cooperation with Russia

Hopkins conferred with **Stalin** in Moscow on United States aid to Russia

President **Roosevelt** requested power to curb prices and rents

Sen **Tom Connally** of Texas became chairman of Senate Foreign Relations Committee

Britain warned Iran on the number of Germans there

31—Economic Defense Board was created under Vice-President **Wallace** to strengthen international economic relations for defense

Switzerland celebrated its 650th anniversary

AUGUST

1—United States exports of crude oil and aviation fuel to Japan ceased

Enoch L. (Nucky) Johnson, New Jersey politician, was sentenced to ten years and \$20,000 fine for income tax evasion

2—United States and Russia exchanged notes providing United States supply of war materials

Processing of raw silk was banned in nondefense industries.

3—Gasoline curfew was imposed at midnight in 17 Eastern States, closing filling stations from 7 p m to 7 a m

4—Thai troops rushed to border where Japanese massed. Japanese shipping to United States was suspended

6—Germans captured Smolensk

United States and Britain warned Japan against occupying Thailand; second warning, August 13

Germans claimed 895,000 prisoners in Russian campaign, Russians (August 8) put German losses at 1,500,000 versus 600,000 for Russians

7—**Bruno Mussolini**, Il Duce's son, was killed while testing a new bomber

Germans intensified Ukraine drive

8—Russian planes raided Berlin

9—OPM placed steel under complete priorities control effective September 1, 11,000,000-ton deficit for year forecast

10—Crash of ferry plane to Britain cost 22 lives, two others, August 14 and September 1, brought ferry plane casualties to 54

Warden of Oklahoma State Prison, two prisoners, and a guard were killed in attempted prison break by four

Pro-Nazi leaders were arrested in Chile. Germany retaliated, September 18.

11—Executive order established control over installment buying to combat inflation; effective September 1.

Japan was put on economic war footing under national mobilization act, shipping went under state control, August 20

12—Britain and Russia pledged aid to Turkey if attacked by a European power.

U.S. House voted extension of draft to two-and-one-half years by one-vote margin, 203-202, bill was signed August 18

Marshal Pétain in a broadcast assumed complete authority and pledged collaboration with Nazis

Germans claimed successful push to Black Sea, surrounding Odessa

14—President **Roosevelt** and Prime Minister **Churchill**, after a secret meeting at sea, issued an 8 point statement of peace aims, called "The Atlantic Charter"

Germany admitted that air assaults had brought civilians into the front lines.

Japanese Vice Premier, Baron **Kiichiro Hiranuma**, was wounded in attempted assassination

Cuba expelled last German consul

Leon Henderson called Rep. **Martin Dies** "not a responsible member of Congress"

15—OPACS ordered 10 per cent reduction in gasoline delivered to retailers in Eastern States.

16—Japan closed borders of Manchoukouo to foreigners

Russia obtained £10,000,000 credit from Britain in new trade agreement

17—Britain and Russia issued second warning to Iran to eliminate German "tourists"

Nazis captured **Nikolaev**, naval base on Black Sea

American-owned freighter *Sewa* of Panamanian registry was torpedoed 300 miles southwest of Iceland, 24 of 27 crew members lost including one American. (Sinking was announced, September 9)

18—Russians abandoned Kingisepp, 70 miles from Leningrad

Havana bombings injured 12.

United States announced plane ferry service to Near East via West Africa

Fire on Brooklyn (N Y) pier destroyed the freighter *Panuco*, 31 known dead

19—United States protested detention of Americans wishing to leave Japan, gradual repatriation agreed on, August 23

U.S. War Department announced that draftees 28 and over would be released, all to be released after 14 to 18 months of service unless situation deteriorated

Sen **Harry F. Byrd** called defense production "appallingly ineffective", **Roosevelt** denial followed, August 22

21—A Nazi colonel was stabbed in Paris subway, rioting broke out, followed by mass arrests

German decree instituted execution of hostages for new criminal acts, the number executed corresponding to the gravity of the crime

Dnieper Dam was reported destroyed in effort to check Germans, admitted by Russia, August 29

August-November passenger auto production in United States was ordered cut 26.6 per cent

22—Argentina arrested 86 Germans leading Nazi penetration

United States oil executives claimed gasoline stocks were ample

Russians yielded **Nikopol**, barricaded streets of Leningrad.

23—U.S. Navy Department took over Federal Shipbuilding and Dry Dock Co., Kearny, N.J., after 18-day strike of 17,000 C.I.O. workers holding up defense orders, company had requested the action, August 11, refusing to discharge employees for failure to pay union dues

Pétain instituted special military courts empowered to impose death sentence in drive against opposition, 11 executed in first week

Duke of **Kent** arrived in United States for informal visit

24—**Churchill** pledged British aid to United States in case of war with Japan

Construction of oil pipeline from Baton Rouge to Greensboro, N.C., was authorized, dropped when SPAB refused to allot necessary steel, September 9

25—British and Russian troops advanced into Iran at five points to prevent German coup, Turkey denounced attack

Paris was patrolled by 20,000 German soldiers following new demonstrations and two train wrecks

Roxford Guy Tugwell confirmed as Governor of Puerto Rico; Solicitor General **Biddle** named Attorney General

26—Russians admitted loss of Novgorod

United States announced military mission to China under Gen. **John Magruder**.

Russia warned Japan against interfering with her trade with United States

27—Iranian Cabinet resigned; new Government formed under **Ali Furanghi** issued orders to cease fire, August 28

French ex-Premier **Pierre Laval** and pro-German editor **Marcel Deat** were seriously wounded at Versailles by 21-

year-old **Paul Collette**, de Gaullist sympathizer. (His sentence was commuted to life imprisonment, October 8)

28—Supply Priorities and Allocations Board was created under Vice-President **Wallace** for broad supervision of defense program

Japanese Ambassador Adm. **Kichisaburo Nomura** initiated direct conversations with President **Roosevelt**, delivering conciliatory letter from Prince **Konoye**.

American republics agreed to take over Axis ships immobilized in their ports.

Arthur William Fadden succeeded **E. G. Menzies** as Australian Prime Minister

29—**Hitler** and **Mussolini** concluded a five-day conference on the Eastern Front

Varian M. Fry, head of American Aid Center at Marseilles, was arrested as anti-Nazi

Jarvis Catoe, 36-year-old Negro, admitted assault and murder of six women in Washington, D C , series of crimes had caused investigation and shake-up in police department

30—Finns recaptured **Viborg**
Germany claimed 60 vessels lost by Russia in effort to evacuate Tallinn

Brazil stopped publication of 37 foreign newspapers

31—**Pétain** constituted the French Legion a new government party.

SEPTEMBER

2—Gasoline retail dealers of the Eastern States at Philadelphia meeting challenged existence of shortage

3—**J. J. Felley**, president of railroad association, reported idle tank cars could relieve gas shortage, 11 oil companies agreed to use cars, September 5

4—United States destroyer **Greer** en route to Iceland with mail was attacked by submarine but not damaged, counter-attacked with depth charges President **Roosevelt** the next day ordered the United States fleet to "eliminate" the attacking submarine

First United States tanker with oil for Russia reached Vladivostok

OPM formed Division of Contract Distribution under Floyd B. Odium to bring small business into defense effort

5—**Steel Seafarer**, flying the American flag, was bombed and sunk in the Gulf of Suez, no lives lost
Nazis shelled Leningrad

7—Representative **Dies** accused **Henderson** and four subordinates in OPACS of Communist sympathies

Heaviest raid on Berlin was made by British
Mrs. **Sara Delano Roosevelt**, mother of the President, died

8—Britain temporarily occupied Spitzbergen to destroy coal mines useful to Germans
Germany admitted attack on **Green**

9—Iran accepted British-Russian armistice terms, closing Axis legations and surrendering Nazis
United States and Britain agreed to regulate trade competition during the war

Pennsylvania anthracite miners struck against increased union dues, 10,000 affected

Secretary of the Treasury **Morgenthau** warned United States of imminent inflation.

Sen **Gerald P. Nye** charged a small group of motion-picture producers with war propaganda, motion-picture interests retained **Wendell L. Willkie** as counsel

10—Trade union opposition to **Vidkun Quisling** brought martial law in Oslo, followed by a violent demonstration in Trondheim (September 12), mass arrests, and strict censorship

The Pope received **Roosevelt's** personal envoy, **Myron C. Taylor**.

11—**Roosevelt** ordered US Navy to shoot on sight against raiders in defensive waters, Secretary of State **Hull** in his next press conference refused to delimit "defensive waters"

US Maritime Commission freighter **Montana** of Panamanian registry was sunk off Iceland, crew rescued

Special Senate investigating committee reported no oil shortage existed.

Lindbergh asserted that "the British, the Jewish, and the Roosevelt Administration groups" were leading America toward war; speech was widely attacked for racial bias.

Guatemala extended presidential term of Gen **Jorge Ubico** to Mar. 15, 1949.

Russia accused Bulgaria of acting as a base for Axis attack, Bulgaria rejected protest, September 16

Belgian King **Leopold** married a commoner, Mlle **Marie Lillian Baels**, daughter of ex-Cabinet minister (marriage was kept secret until December 7)

12—Japan created a new General Defense Headquarters under Gen. **Otozo Yamada**, directly responsible to Emperor

US Army bombers completed secret formation flight over new routes from Honolulu to the Philippines.
Anthracite coal prices were fixed

13—British reported loss of eight ships in convoy

14—Wing of R.A.F. arrived in Russia.

Series of time bombs exploded in telephone exchange at Zagreb, Croatia; 50 executed September 19

15—Lend-lease report showed only one tenth of funds

voted had been transferred abroad in materials and services

Argentine Deputies censured German Ambassador Baron **Edmund von Thermann** for abusing diplomatic privileges
Lord **Beaverbrook** was appointed to head British economic mission to Russia

16—Independence of Syria was proclaimed, with **Sheik Taj Eddin el Hassani** as President.
Shah of Iran abdicated; succeeded by his 21-year-old son Prince **Mohammed Elza Pahlavi**.

Russians repulsed attempted German landing on Baltic Island of Oesel, second attempt failed the next day also

17—Japanese launched offensive in northern Hunan Province

Germans reported new drive into Crimea.
Two Germans and one Rexist were slain in Tournai, Belgium, 25 hostages held

Secretary **Knox** stated that United States warships were on convoy duty

19—Nazis occupied Kiev, capital of Ukraine; captured **Poltava**

German demarche demanded Bulgarian entry into war
American-owned freighter **Pink Star** of Panamanian registry was sunk 255 miles southwest of Iceland, 12 missing of crew of 36

20—Largest United States tax bill in history was signed (\$3,553,400,000), exemption lowered to \$750 for single persons

Bulgaria declared a state of emergency

21—**Pétain** broadcast an appeal for order to prevent execution of hostages

22—King **George II** arrived in London to create Greek Government-in-Exile

23—Argentine Government occupied all air bases to forestall sedition in Air Corps, Commander of Aviation, Gen **Angel Maria Zuloaga**, was removed, September 25

Eight Mexican workers were killed in front of the President **Avila Camacho's** home in demonstration against treatment in munition factories

24—At Inter-Allied Conference in London, 11 governments adhered to the Atlantic Charter, postwar rehabilitation was planned under Sir **Frederick Leith-Ross**.

NDMB settled 12-day shipping strike, 26 ships were affected, three having been taken over by the government, September 18

Nazis thrust into Crimea

25—Berlin reported street fighting at Leningrad, Russia admitted the enemy was at the gates
Italy reoccupied demilitarized zone in Croatia to quell Serb opposition

Repeal of Neutrality Act was introduced in Senate
The Brooklyn Dodgers clinched the National League pennant, lost World Series to Yankees, October 6

The Duke and Duchess of Windsor visited Washington

26—Nazis, balked on Perekop Isthmus, attempted parachute operations in Crimea

27—State of emergency was proclaimed in Bohemia and Moravia, **Reinhard Heydrich**, **Himmel** aide, succeeded **Von Neurath** as Reich protector, former Premier Gen **Alois Elias** was arrested (September 28) for treason

Germans bombed guerrillas in Yugoslavia, destroying town of Uzice
American-owned tanker **I C White** was torpedoed and sunk in the south Atlantic

United States launched 14 merchant ships in Liberty Fleet Day celebration

28—**Marion Miley**, golf star, was murdered in a robbery at Lexington, Ky, country club, ex-convict **Tom C. Penney** confessed, October 12

29—Three-power conference opened in Moscow, United States delegation was headed by **W. Averell Harriman**, Minister to London (United States and Britain agreed to supply war materials in return for raw materials)

Mass arrests in Bulgaria followed disorders

Deportation of pro-Communist CIO leader **Harry E. Bridges** was recommended by examining judge in San Francisco

30—President **Roosevelt** stated that Soviet constitution guaranteed religious freedom

OCTOBER

1—Japanese withdrew from Changsha (occupied September 27), Chinese claimed smashing victory
Italy rationed bread to seven ounces daily

United States signed lend-lease agreement with Brazil
Ten per cent United States "luxury tax" went into effect, preceded by a buying splurge

2—Japan launched drive into Hunan Province, captured Chengchow, October 6

3—**Hitler**, returning from the front, announced that "Russia is already broken."

Mayor of Prague and several officials were put to death, Czech executions totaled 141

John Curtin, Labor leader, succeeded **Fadden** as Prime Minister of Australia.

6—Aluminum Company of America was cleared of 1937 monopoly charge
Greek refugees reported wholesale executions, later reports told of looting and starvation.

7—British-German plan for exchange of prisoners was cancelled.
 U.S. Office of Facts and Figures was created.
 8—Russians lost OreI, claimed recapture, October 14
George Sylvester Viereck, pro-German publicist in United States, was arrested for withholding information on his propaganda activities
 9—**Ricardo Adolfo de la Guardia**, pro-U.S. Minister of Government, became President of Panama in a bloodless coup.
 Turkey signed a new trade treaty with Germany
 SPAB prohibited new construction requiring critical materials
 10—Germans claimed **Taganrog**, ending battle for the Sea of Azov. (Russia admitted withdrawal, Oct. 23)
 Plan for rehabilitating men rejected by the U.S. Army was announced
 12—U.S. Navy disposed of a German radio station in Greenland
 A \$14,000,000 fire at Fall River, Mass., destroyed quantities of crude rubber and other defense materials
 14—Argentina and U.S. signed a reciprocal trade pact
 Russians evacuated **Vyzama**
 16—Germans captured **Odessa** after two-month siege
 American-owned freighter **Bold Venture** was sunk 500 miles south of Iceland
 Central Pattern and Foundry Co. of Chicago was penalized by OPM for diverting aluminum from defense, aluminum operations were forbidden until Mar. 21, 1942
 17—Japanese Cabinet resigned on issue of agreement with U.S. New Cabinet was formed by Gen **Hideki Tojo** (Oct 18) with **Shigenori Togo** as Foreign Minister
 American merchant ships in Asiatic waters were ordered to put in at friendly ports because of Japanese crisis
 U.S. destroyer **Kearney** was torpedoed and crippled 350 miles southwest of Iceland, 11 missing and 10 injured
 U.S. House voted to amend Neutrality Act
 18—Canada imposed ceilings on prices, ordered cost of living bonuses, Oct 25
 19—Afghanistan consented to eject Axis nationals
 Freighter **Lehigh**, flying American flag, was sunk in the South Atlantic
 20—State of siege was proclaimed in Moscow, Government arrived at **Kubyshev** to establish temporary capital. Nazi commander at French seaport of **Nantes** was assassinated. 15,000,000 francs reward offered for killers, 50 hostages executed in retaliation the following day
 21—German major was killed at **Bordeaux** by four youths who escaped; curfew was imposed and 100 hostages were seized (50 put to death, Oct. 24)
 Mexico and Great Britain resumed diplomatic relations
 Germans captured **Stalino**, Donets industrial center
Wilkie and other Republican leaders called for repeal of Neutrality Act
 22—Rumania denounced Vienna Pact with Hungary, re claiming **Transylvania**
 23—Gasoline restrictions were ended after British agree to return 25 tankers
 British Labor members of Parliament demanded military action to aid Russia
 Mrs **Florence Maybrick**, center of famous 1889 murder trial, died a recluse in Connecticut
 U.S. Maritime Commission was rebuked for revealing that supplies to Russia go through Boston
 24—**Arthur H. Starnes** set a record for free fall at Chicago, dropping 5 1/2 miles before opening his parachute
 Italian Foreign Minister **Count Ciano** visited Hitler at headquarters.
 Germans captured **Kharkov**, industrial center of Ukraine
 25—**Mussolini** reorganized Fascist guilds
 26—C.I.O. strike in "captive" coal mines called out 53,000; after three appeals from Pres **Roosevelt**, **John L. Lewis** halted the strike setting a new deadline for November 15.
 27—Pres **Roosevelt** in a radio address said, "The shooting has started"
 Three largest U.S. tobacco companies were convicted of price fixing and monopoly, violating Sherman Act
 28—New lend-lease bill for \$5,985,000,000 was signed; **Edward B. Stettinius, Jr.**, received full authority as administrator.
 29—U.S. Navy tanker **Salinas** was torpedoed in North Atlantic but reached port with no casualties.
 Germans cracked Russian defense on **Perekop Isthmus**
 30—U.S. destroyer **Reuben James** was torpedoed and sunk on convoy duty west of Iceland, 2 known dead, 45 rescued; 98 missing
 Northwestern Airlines plane crashed near **Fargo, N.D.**, killing 14, American Airlines transport crashed near **St. Thomas, Ont.**, 20 hours later, killing 20.
 Secretary of War was ordered to take over the **Bendix, N.J.** plant of Air Associates, Inc., after company refused to restore all strikers
 Supply of planes to Russia was given priority over U.S. Army
 31—It was announced that Gen **Gustave Marie Gamelin**, **Edouard Daladier**, and **Léon Blum**, would be tried at **Riom, France**, Jan 15, 1942, for war responsibility

Eighty thousand guerrillas were reported fighting Axis forces in Yugoslavia.

NOVEMBER

3—Germany declined to pay compensation for the **Robin Moor**
 4—Mayor **Fiorello H. LaGuardia** was reelected mayor of New York City, defeating District Attorney **William O'Dwyer** by 183,841.
 5—Loss of 17 American technicians en route to Britain was announced.
 6—A United States cruiser captured an Axis ship disguised as an American merchant ship in the Atlantic
 United States extended \$1,000,000,000 in lend-lease funds to Russia, **Maxim Litvinoff** was appointed Soviet Ambassador to Washington
George E. Browne and **Willie Bloff**, Chicago labor racketeers, were found guilty of extorting \$1,200,000 from the motion picture industry (sentenced to 10 and 8 years each with \$10,000 fines)
 7—New York City assigned 250 additional police to stamp out Harlem crime wave
 Senate passed Neutrality Act amendment, 50 to 37
 8—Hitler ordered the German Navy not to shoot when they see Americans but to defend themselves when attacked
 Two American soldiers killed a native fisherman in a cafe brawl in Iceland
 Heavy R.A.F. raids during storms cost the British 37 bombers within 24 hours
 9—Train wreck near **Dunkirk, Ohio**, cost 9 lives, 65 injured
 10—**Churchill** declared that Britain would join the United States in case of war with Japan "within the hour"
 NDMB voted 9 to 2 against the demands of the United Mine Workers for the closed shop in captive coal mines
 11—C.I.O. members of NDMB resigned
 12—Finland rejected a United States warning of November 3 to stop fighting Russia
 13—House passed Neutrality Act amendment, 212-194, following a letter from **Roosevelt** pledging action against defense strikes.
 14—Special Japanese Envoy **Saburo Kurusu** arrived in the United States to submit "last proposals"
 President **Roosevelt** announced that all American marines would be withdrawn from China
 British airplane carrier **Ark Royal** was torpedoed and sunk about 25 miles east of Gibraltar
 President **Roosevelt** warned United Mine Workers that neither the government nor Congress would order a closed shop
 17—Neutrality Act amendments were signed permitting the arming of American merchant vessels and shipping to belligerent ports
 United Mine Workers struck in "captive" coal mines, as negotiations terminated without agreement on union shop issue; C.I.O. convention voted support
 18—British Eighth Army under Lieut Gen **Sir Alan Gordon Cunningham** attacked on a 130 mile front in Africa and penetrated 50 miles into **Libya**
 Retirement of British Chief of the Imperial General Staff, Gen **Sir John G. Dill**, was announced, effective Christmas Day, to be succeeded by Lieut Gen **Sir Alan Brooke**, Commander of the Home Forces
 Paris announced arrest of several terrorists in the **Nantes** and **Bordeaux** assassinations, a leader of the band, **Gilbert André Brulstein**, was still at large
 19—United States and Mexico signed an agreement to negotiate oil claims, oil companies rejected proposal, November 21 (Ratified by U.S. Senate, December 29)
John L. Lewis rejected an appeal from President **Roosevelt** on the captive mines dispute, fist fights between **Lewis** and **Murray** factions occurred at the C.I.O. Convention
 War Department forced change in management of Air Associates, Inc., as prelude to returning the **Bondix** plant to the owners
 20—Gen **Maxim Weysgand** "retired" as Vichy Delegate General in Africa, post abolished
 21—**Philip Murray**, reelected president of the C.I.O., charged that corporation executives "virtually infested" the defense agencies to get profitable contracts
 22—**John L. Lewis** accepted arbitration in captive mines strike
 24—United States established troops in **Surinam** by agreement with the Netherlands Government-in-exile and **Brazil**, extended lend-lease aid to the **Free French**; and revoked export licenses to French **North Africa, Spain, and Tangier**
 The Supreme Court invalidated California's anti-migrant law
 25—Anti-Comintern Pact of 1936 was renewed in Berlin; 13 nations signed
William O. Bullitt was appointed special United States representative in the Near East
 26—U.S. Secretary of State transmitted to Japan a document setting forth basic principles of United States—proposed a multilateral nonaggression pact in the Pacific
 House defeated **Gore** bill for "over-all" control of rents, prices, and wages, 218 to 63.

A.F.L. and C.I.O. opposed strike bans in defense industries.

27—Italians surrendered Gondar, last Ethiopian outpost, after 7½ months of defense.

28—House passed 224 to 161 a measure setting up a five-man board to control prices during the emergency.

29—Japanese Premier Tojo stated that Japan must purge American and British exploitation of Asiatic peoples, Roosevelt cut short his holiday to return to Washington House Military Affairs Committee ordered investigation of "defense brokers" profiteering on government contracts Russians recaptured Rostov (lost November 22) and attacked in the Ukraine

DECEMBER

1—Japanese Foreign Minister Shigenori Togo rejected American proposals for a Pacific settlement as "fantastic" *Pétain* and *Goering* met at St. Florentine to expand collaboration policy on an "acts, not words" basis

In Minneapolis 18 were convicted of a plot to create insubordination in the armed forces, including three leaders of the Socialist Workers party

A general railway strike was averted by basic pay rises of 9½ and 10 cents an hour

2—President Roosevelt formally asked Japan for an explanation of recent moves into Indo-China; Japanese reply (December 6) blamed China for troop concentrations and claimed movements were within her treaty with Vichy.

First squadron of warships in Britain's new Far East Fleet arrived in Singapore, led by the new battleship, *Prince of Wales*

Churchill asked authority to raise age for compulsory military service from 41 to 51 and to require women for the unformed services.

Sixty persons were arrested in Italy in an alleged plot to kill Mussolini and overthrow the Fascist regime

3—House passed, 252-136, a drastic anti-strike measure

Russians evacuated Hango naval base with Finns claiming to have sunk numerous vessels

6—President Roosevelt sent a personal message to Emperor Hirohito on the Pacific conversations.

Russians launched broad counter-offensive Great Britain declared war on Finland, Rumania, and Hungary when no reply was received to an ultimatum demanding cessation of hostilities against Russia

United States seized Finnish ships in American ports 7—Japan launched an air and naval attack on Pearl Harbor at Honolulu at 1 05 p.m. Sunday, E.S.T. (December 7, 7.35 a.m., Hawaii time), bombed Guam, Wake Island, Davao, P.I., Malaya, and Hong Kong; sank an American transport carrying lumber and a freighter in the Pacific

Japan delivered a flat rejection of United States proposals for peace in the Pacific at 2 35 p.m.

President Roosevelt put the Army and Navy on a war footing and summoned the Cabinet, FBI ordered a nation-wide roundup of Japanese nationals

Japan declared war on the United States at 4 p.m. (6 a.m., December 8, Tokyo time)

Netherlands East Indies and Canada declared war on Japan

A three-man arbitration board under John R. Steelman reversed NDMB and granted the closed shop in the captive mines

8—Japanese bombed Singapore, Penang, and Philippine points, attempted landings in northern Malaya, invaded Thailand, which capitulated, captured 200 U.S. Marines in North China, occupied the International Settlement at Shanghai, seizing the United States gunboat *Wake* and sinking a British gunboat.

Great Britain declared war on Japan

Congress voted to declare war on Japan with only one dissenting vote (Miss *Jeanette Bankin* of Montana) 33 minutes after the President requested it in a 6½ minute address to joint session at 12 30 p.m.

Nicaragua, Honduras, El Salvador, Guatemala, Haiti, the Dominican Republic, the Netherlands, the Free French, Costa Rica, and Panama declared war on Japan

Mexico, Colombia, Belgium, and Egypt severed diplomatic relations with Japan

President Roosevelt accused Germany of instigating the Japanese attack in order to hamper lend-lease aid to Britain; pledged continuing of aid 100 per cent

Germany admitted drive on Moscow was halted until after the winter

Lindbergh, America First Committee, and other isolationist groups pledged support in war

Two formations of Japanese planes were reported over the San Francisco area at night

9—Japanese bombed Nichols Field near Manila; gained two footholds in Northern Malaya, capturing the Kota Bharu air base (December 10); sank British battleship *Prince of Wales* and battle cruiser *Repulse* off Malaya, with loss of 595 men including Adm. Sir Tom S. V. Phillips.

Australia, the Union of South Africa, and New Zealand declared war on Japan; China declared war on Japan, Germany, and Italy.

Congressional debate brought sharp criticism of the Navy for being caught asleep

President Roosevelt in a fireside chat conceded "a serious set-back in Hawaii" and warned that "we must be set to face a long war."

10—U.S. Army reported a heavy Japanese attack on the island of Luzon in the Philippines, claimed direct hits on three Japanese transports, Filipino constabulary reported two Japanese landings. There were repeated attacks on Wake and Midway Islands.

Attorney General *Francis Biddle* announced that 2,803 enemy aliens had been arrested in roundup.

Britain announced that United States would maintain Eritrea as a supply base; title to remain with Britain. Siege of Tobruk, temporarily broken on November 27, was finally lifted

Cuba declared war against Japan 11—Germany and Italy declared war on the United States; Italy, Germany, and Japan agreed to conduct a joint war and not to sign a separate peace.

United States declared war on Germany and Italy Costa Rica, Cuba, Guatemala, Nicaragua, and the Dominican Republic declared war on Germany and Italy, Mexico severed diplomatic relations

Poland declared war on Japan Congress, without debate, eliminated the prohibitions against an A.E.F., term of enlistment and induction in the armed forces was extended to six months after the end of hostilities

A Japanese landing was repulsed in the Lingayen area in the Philippines

12—Haiti, Panama, and Honduras declared war on Germany and Italy

Rumania declared war on the United States Japanese occupied Kowloon; Chinese attacked all along the Kwangtung front

Giam fell to Japanese Japanese landed at Legaspi in southern Luzon

United States seized 14 French vessels in United States ports, including the *Normandie*

A Brooklyn court imposed penalties up to 22 years on 14 found guilty as German spies; 19 others had pleaded guilty

The Red Cross opened a drive for \$50,000,000.

San Francisco was blacked out for two hours and 40 minutes

13—Japanese landing forces at four points on Luzon were checked, Clark and Nichols Fields near Manila were bombed; Netherlands Indies claimed the sinking of four Japanese transports off Thailand

El Salvador declared war on Germany

Hungary declared war on the United States; Bulgaria declared war on the United States and the United Kingdom

The United States took over the Swedish liner *Kungs-holm* at New York City under the right of angary

Litvinov called Japan the "common enemy" but announced that Russia would concentrate on Hitler.

Nazi Commander in Chief in France, *Gen. Otto von Stueelpnagel*, announced that 100 "Jews, Communists, and anarchists" would be executed for attacks on German soldiers (Vichy government protested, December 14).

14—Japanese began an offensive against Hong Kong after refusal of the Colony to surrender.

15—Mau and Johnston Island were bombarded in second Japanese attack on Hawaiian Islands

Congress voted \$10,077,077,005 emergency appropriation for the armed forces

Secretary of the Navy *Knox* reported on a personal investigation (December 11) at Pearl Harbor, listed 1 United States battleship, 3 destroyers, 1 minelayer, and 1 training ship destroyed, battleship *Oklahoma* capsized, loss of 2,397 men The President appointed a five-man board to investigate the Pearl Harbor disaster

The A.F.L. Executive Council adopted a no strike policy in war industries and extended a peace offer to the C.I.O.; C.I.O. staged a "Defend America" rally in Madison Square Garden, N.Y.

16—U.S. Commander in Chief of the Pacific Fleet, Adm. *Husband E. Kimmel*, was replaced by Rear Adm. *Chester W. Nimitz*; War Department replaced Lieut. Gen. *Walter C. Short*, Commander of the Hawaiian Department, and Maj. Gen. *Frederick L. Martin*, Commander of the Army Air Forces in Hawaii

Japanese were driven back at Vigan, P.I.

17—Congress conferred wide emergency powers on the President.

President Roosevelt summoned a labor-management conference to adopt a policy on defense stoppages

Japanese landed in Borneo, British retired after destroying oil property in Sarawak and Brunei.

O.P.A. rationed rubber, decreasing civilian consumption almost 80 per cent

Moscow recaptured Kalinin, claiming destruction of 8th German Army Corps

U.S. Navy announced 11,808 enlistments in the first eight days of war

18—United States reached an agreement with French governor of Martinique preserving the island's neutral status

Netherlands and Australian troops occupied Portuguese

Timor to forestall its use as a Japanese base, Portugal demanded withdrawal, December 19.

British smashed Nazi line in El Gazala area, Libya; captured Derna.

Hilo, P.I., was heavily bombed.

FBI arrested Laura Ingalls, woman aviator, as an unregistered German agent.

19—Tokyo reported landing on Hong Kong at 6 55 a m after a week of siege, captured Penang after withdrawal of British garrison.

Congress voted draft for all men 20 to 44, providing 7,000,000 effectives.

A British royal proclamation set January 14 for registration of all women 20 to 31 under the National Service Act.

Ten thousand Federal employees were transferred from Washington because of space shortage.

20—Japanese landed at Davao, P.I.; attacked two United States tankers just off the California coast (six were lost on the *Emulo*).

Adm. Ernest J. King was named Commander in Chief of the U S Fleet.

D S C was awarded to Capt Colin P. Kelly, who crashed in his bomber after destroying the Japanese battleship *Haruna*, and to 12 others.

Hitler appealed to German people to give warm clothing for the soldiers on the Russian front.

Japanese completed the conquest of Kedah Province, Malaya.

21—Hitler personally assumed supreme command of the German Army after ousting Gen Field Marshal Walther von Brauchitsch; three other commanders on the Russian front were reported out—von Bock, von Rundstedt, and von Leeb.

U S Army sighted 80 enemy transports, off Lingayen, 110 miles northwest of Manila, heavy Japanese force landed on Lingayen Gulf.

22—Churchill arrived in Washington for a war conference; held a joint press conference with the President, December 23.

The President's 24-man Industry-Labor Conference reported a deadlock, Roosevelt promulgated a peace formula (December 23) ignoring the deadlock issue of the closed shop and announcing plans for a War Labor Board.

Wake Island surrendered after a heroic 14-day defense by 378 U S. Marines under Maj. James Patrick S. Devereaux, having accounted for a Japanese cruiser, 3 destroyers, and at least a dozen planes.

British evacuated Penang.

23—United States, Britain, and China set up an ABC Military Council at Chungking meeting of military leaders. U S Army reported 28,363 enlistments since December 7.

British withdrew to defensive position along Krian River in Kelantan Province, Malaya.

Japanese landed at Antimonan, 135 miles southeast of Manila.

24—Japanese made another landing on Luzon at Mauban, 50 miles south of Manila, 40 transports sighted, heavy fighting reported in Lingayen battle.

A Free French naval force under Vice Adm Emile Muselier took over St Pierre and Miquelon without firing a shot. United States condemned seizure (December 25) while populace voted 98 per cent for the Free French in a plebiscite.

Netherlands reported liquidation of attack on Miri in Sarawak.

British captured Bengazi.

Baguio near Manila was evacuated as Japanese advanced.

25—British announced fall of Hong Kong after 11-day siege.

Japanese forces reached Binalonan and Tuguegarao on Luzon.

26—Churchill addressed a joint session of U S Congress, asserting faith in victory.

OPA prohibited average motorist from buying new tires after Jan. 5, 1942.

Kuching, capital of British Sarawak, fell to Japanese. Lieut. Gen. Sir Henry Pownall succeeded Air Chief Marshal Sir Robert Brooke-Popham as British Commander in Chief in the Far East.

27—Manila, although declared an open city (December 26) and undefended, was bombed for 3 hours and 17 minutes with serious damage.

British raided Norwegian coast with small units.

28—Second day's bombing of Manila caused great damage; Japanese bombed Medan in Sumatra and landed parachute troops at the air base.

British Foreign Minister Eden reached an agreement in Moscow on conduct of the war after two weeks of conferences.

President Roosevelt in a message to the Filipino people pledged that their freedom will be redeemed and their independence established and protected.

29—Churchill arrived in Canada for war conferences, addressed Parliament in Ottawa, December 30.

Japanese drove through Ipoh in northern Malaya.

30—The President set a goal of armament expenditures

equaling 50 per cent of the national income (27 per cent was the goal for 1942).

Mohandas K. Gandhi resigned as leader of the All-India National Congress because of his pacifist policy.

Lindbergh offered his services to the Army air force.

31—Russians, advanced on all fronts; recaptured strategic points in the Crimea.

U.S. Department of Justice filed suit against N.B.C. and C.B.S. to break up alleged monopoly of broadcasting.

Japanese lines at Dolores, 80 miles south of Manila, and at Zaragoza, 65 miles north of Manila.

CHURCHES. See RELIGIOUS ORGANIZATIONS. For edifices, see ARCHITECTURE under *Community Buildings*; HEATING AND VENTILATING.

CHURCHES OF CHRIST. See DISCIPLES OF CHRIST.

CHURCHILL, Winston. See GREAT BRITAIN; RADIO PROGRAMS; UNITED STATES.

CHURCH OF CHRIST, SCIENTIST. See CHRISTIAN SCIENCE, RELIGIOUS ORGANIZATIONS.

CHURCH OF ENGLAND. See ENGLAND, CHURCH OF.

CHURCH OF GOD. A name used by a number of small religious groups in the United States. For statistics on the larger bodies bearing this name, see RELIGIOUS ORGANIZATIONS; also, KENTUCKY under *History*.

CIGARS, CIGARETTES. See TOBACCO.

CINCINNATI. See FLOOD CONTROL, SEWERAGE AND SEWAGE DISPOSAL.

CITY MANAGER PLAN. See MUNICIPAL GOVERNMENT.

CITY PLANNING. See PLANNING.

CIVIL AERONAUTICS ADMINISTRATION (CAA) AND AUTHORITY. See AERONAUTICS, METEOROLOGY.

CIVIL AIR PATROL. See AERONAUTICS under *Private Owner Aviation*, CIVILIAN DEFENSE, OFFICE OF.

CIVILIAN CONSERVATION CORPS (CCC). Adaptation of the Civilian Conservation Corps program to the needs of national defense represented the outstanding development in Corps activities during the 1941 calendar year. National defense activities at the end of December included the training of young men in skills useful in national defense industries, the development of physical hardihood in youth, the conduct of work on military reservations for the purpose of aiding the army in development of training grounds, and the advancement of conservation projects in forest areas, on farms, and on the public domain.

The CCC began the 1933 calendar year with 1,500 camps and approximately 300,000 enrollees. At the conclusion of 1941 there were in operation 872 camps with an enrollment of 160,000. In eight years of operation—April, 1933, to April, 1941—two and one-half million men served in the CCC. Expansion of national defense activities in industry and the enormous increase in the Army reduced the ranks of unemployed youth, thus resulting in a decrease in the number of CCC camps in operation. As of December 31 sufficient applications for enrollment were available to maintain the Corps at an average strength of approximately 150,000 men for the balance of the fiscal year which ends on June 30, 1942.

While the number of camps in operation was smaller, the rate of turnover among enrollees was much greater than normal due to increased employment opportunities for youth. In recent years enrollees, on the average, have remained in the Corps about nine months. During the last year the average enrollee left the Corps after about 6½ months of CCC training. The average age of enrollees entering the CCC was smaller than in any previous year, about one-half of the new juniors being in the 17-year age group. The average age of junior enrollees was 18½ years. Of the enrolled personnel, about 10 per cent were war veterans and the balance juniors between the ages of 17 and 23. More

than 10 per cent of the junior enrollees were Negroes. It is estimated that about 550,000 men were enrolled for varying periods of time during the calendar year.

The CCC training program included the development of health and physical fitness in youth, the training of young men to drive trucks, tractors, and to perform all the various kinds of work carried on by the Corps, and the training of young men as cooks, bakers, and mechanics in special schools and in the central repair shops. Young men also were afforded opportunity to attend vocational schools offering special national defense courses where these schools were adjacent to CCC camps.

Eighty-one CCC companies were assigned to military reservations for the purpose of aiding the War Department in the development of training grounds and for the protection of forest areas and other work. The CCC on military reservations cleared land for new development, built small arms, machine gun and anti-tank and artillery ranges, air fields, maneuver grounds, and recreational centers for service men, installed endless miles of communications and utilities systems, conducted malaria and rodent control operations in southern and western cantonments, built and maintained bridges and roads, fenced in areas used as firing ranges, and devoted thousands of man-days to forest fire pre-suppression. On Annette Island, Alaska, CCC constructed a military landing field, docks, a supply depot, and necessary installations for a garrison. Assignment of many additional companies to this type of work was under consideration.

The training of cooks and bakers in special schools continued throughout the year. The value of this training was highlighted by Gen. George C. Marshall, Army Chief of Staff, when he testified before a Congressional Committee that 25 per cent of all head cooks in the army were CCC-trained and that, because of this fortunate reservoir, the Army had escaped a shortage problem.

Basic vocational training courses were concentrated in fields invaluable to both industry and the military forces. Electricity, carpentry, metal working, welding, and radio operation and maintenance were the main subjects. So great was the response of enrollee-students to these training opportunities that time off the 40-hour-week work projects was granted to favor this intensified educational program.

In 1941 it was made mandatory for all enrollees to take the standard Red Cross First Aid course of 20 hours. More than 110,000 enrollees completed the course during the calendar year, forming an important nucleus for the army of air raid protection workers needed in an emergency.

Preparations matured to afford special training facilities at 15 of the 55 central motor repair shops where young enrollees with pronounced aptitudes undergo a year's training in repair and maintenance of all types of automotive equipment, including both gasoline and Diesel motors. Side-camps, similar to school dormitories, have been constructed adjacent to many of the central motor repair shops to house students and for classroom purposes. In tractor operation and maintenance alone, the Corps turned out hundreds of young men who could quickly master the intricacies of tank operation because of their tractor experience.

Fifteen minutes daily marching in military formation was made an order of the day in mid-summer. This, coupled with daily calisthenics, accounted for a half-hour daily of planned exercise and was designed to take the rookie edge off these youngsters, many of whom will be of Selective Service age

within the next few years. A total of 11,209 enrollees left the Corps before the end of their enrollment to enlist or be inducted in the military services.

Under an emergency order by the Corps Director, some 3,000 enrollees were furloughed to farms, ranches, and orchards to help harried growers harvest produce. On completing their tasks, the enrollees were returned to their Corps duties.

In the conservation field, a recent survey prepared for congressional committees disclosed that the future physical value of work completed by the Corps exceeded one billion seven hundred fifty million dollars.

Well-lighted and equipped classrooms permit enrollees to further their academic educations in their leisure time. In fiscal 1941, 54.3 per cent of the enrollment completed the eighth grade, 10.2 per cent finished high school, 0.6 per cent completed college.

An enrollee is paid \$30 a month, \$8 of it in cash, \$15 to his dependents, the remaining \$7 being deposited to his credit and given him on his discharge. If he has no dependents, he must deposit \$22 a month to his credit. Enrollment period is six months, but an enrollee with a good record can re-enroll for a total period of two years.

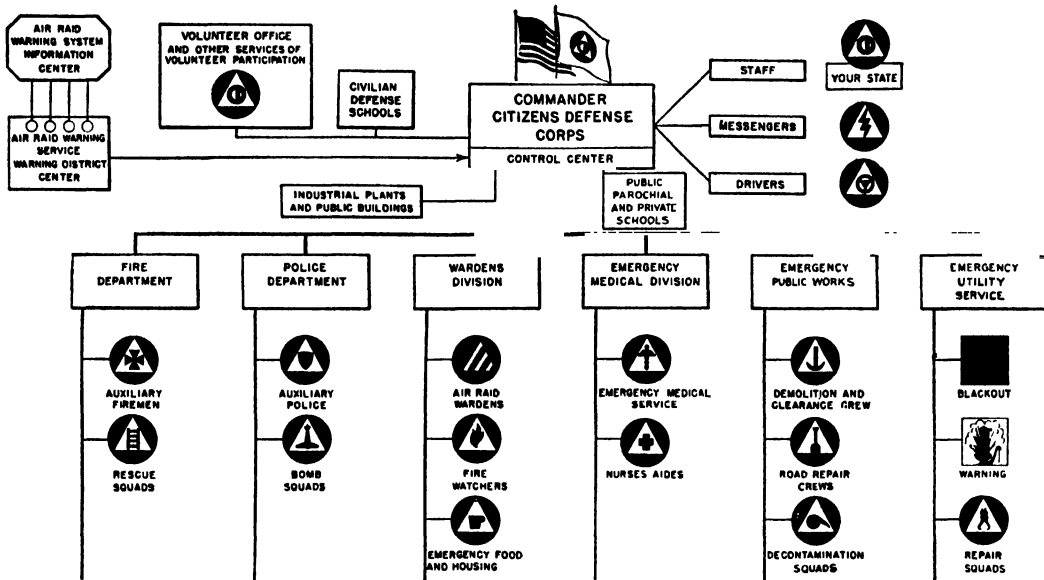
Outstanding achievements of the Corps from its beginning through June 30, 1941, apart from the defense effort, are as follows. Forest trees planted, 2,246,100,600; truck trails and minor roads laid, 122,169 miles; telephone lines laid, 85,548 miles; bridges erected, 45,382; reduction of fire hazards, 2,116,820 acres; check dams built to halt erosion, 5,875,578; rods of fence laid, 26,368,295; forest stand improvement, 3,998,328 acres; impounding and large diversion dams created, 7,073; springs, wells, waterholes, and small reservoirs (mostly for improvement of western grazing areas), 23,725; fighting forest fires, 6,304,211 man-days; fire prevention and fire pre-suppression, 6,182,269 man-days.

J J McENTEE.

CIVILIAN DEFENSE, Office of (OCD). Established by the President's Executive Order No. 8,757 on May 20, 1941, the Office of Civilian Defense, headed by Mayor F. H. LaGuardia of New York, assisted by Mrs. Franklin D. Roosevelt, took over the Division of State and Local Cooperation and became a part of the Office for Emergency Management. Its functions are to coordinate Federal, State, and local defense relationships, to plan and carry out programs of protection for civilian life and property; to sustain the national morale and to create opportunities for civilian participation in the national defense program.

The objectives of the Office of Civilian Defense are to utilize all existing facilities operating for community and national security; to expand those services through enlistment and placement of trained volunteer civilian personnel, and to achieve a state of preparedness against all emergency arising from enemy action. To these ends have been directed the efforts of the two principal divisions of the Civilian Defense Program. The Civilian Protection Program (quasi-military) and the Division of Volunteer and Community Participation.

Civilian Protection is concerned directly with the safeguarding of civilian life and property. Its chief functions are the training of personnel for the 14 volunteer protective services including fire fighting; emergency medical service; air raid precautions; rescue, demolition, decontamination, and repair work. It also includes industrial plant protection.



CIVILIAN PROTECTION ORGANIZATION FOR A MUNICIPALITY
(Citizen's Defense Corps)

The volunteer participation division's functions include the recruitment of individuals and their assignment to proper defense services, it seeks the establishment of a volunteer office for each defense council through which such individuals may be enrolled and placed. It maintains departments to deal directly with groups within communities, to initiate and carry out a national program of youth activities, to maintain contact with veterans' groups, and to conduct a national program of physical fitness. The participation division is particularly concerned with the impact of the national defense effort upon communities and the adjustments necessitated in such localities by new conditions arising from the war.

Established by OCD in cooperation with the War Department, the Navy Department, and the Civil Aeronautics Administration, the Civil Air Patrol coordinates its functions with the entire defense effort and all government departments. It also is under the administration of Director LaGuardia and is concerned with the utilization of the nation's civil aviation resources. It is estimated that 70,000 certified civilian pilots supported by adequate ground personnel will take part in the program.

Fundamentally, the program of civilian defense depends upon the active participation of all State and local governments for its operation, and responsibility for the establishment, maintenance, financing, and administration of State and local defense rests directly upon the authority of State and local governments who are recognized as civilian defense coordinating authorities in their respective areas. To coordinate further the national program, nine regional offices co-terminous with the War Department corps areas have been established along lines similar to the Washington office.

Two advisory bodies function in the Office of Civilian Defense. One is the Board for Civilian Protection, comprised of the Director of OCD and representatives of the Departments of War, Navy, Justice, the Federal Security Agency; Council of State Governments; the American Municipal Association; the U.S. Conference of Mayors; and the American Red Cross. The other is the Volunteer

Participation Committee, composed of representatives from all regions and interests of the nation.

As originally established, the Office of Civilian Defense has no authority under law to compel any State or locality to follow its directions for defense and civilian protection. It can only request and recommend. Before Congress, however, are measures to authorize appropriations of sums for facilities, supplies, and services for the adequate protection of persons and property from air raids; to authorize the loan of equipment without charge from other governmental departments to the Office of Civilian Defense, and to make unlawful the wearing of official civilian defense insignia except as prescribed by the director. These measures are Senate Bill No. 1,936 and H. R. No. 5,727.

Budgetary requirements submitted to the Director of the Budget for study are estimated at \$231,887,693 for the current civilian defense program. This estimate includes cost of 51,750,000 gas masks for the civilian population in the coastal areas, auxiliary fire-fighting equipment; medical supplies and protective clothing.

American civilian defense is based on a close study of war time conditions in the British Isles. Two missions were sent to England and the experience gained at first hand was adapted to American conditions. The American system operates from Washington through the nine regional offices which are in turn in contact with State and local defense councils. It is the council's responsibility to establish and maintain its volunteer office. At the time of the attack on Pearl Harbor, December 7th, there were approximately 6,000 defense councils and an estimated 150 volunteer offices. Volunteers enrolled in the protective services numbered approximately 1,000,000 persons.

Anticipating a future crisis, instructional literature on many phases of civilian defense had been prepared in advance. Much of it is based on English experience and adapted to American needs. Millions of pieces of this literature had been distributed and virtually the entire publication program was completed by Jan. 1, 1942.

The Office of Civilian Defense has rapidly ex-

panded its education program for volunteers as well as its plans and programs for application throughout the country. Courses are offered in most of the protective services and many other schools are being conducted along more technical lines in industrial plant protection and other subjects.

See CHILDREN'S BUREAU. For related activities see AIR RAIDS; BOMBS; FIRE PROTECTION; RED CROSS.

FIGIELLO H. LA GUARDIA.

CIVILIAN EVACUATION. See RED CROSS.

CIVILIAN PILOT TRAINING PROGRAM. See AERONAUTICS under *Private Owner Aviation*.

CIVILIAN SUPPLY DIVISION. See PRODUCTION MANAGEMENT, OFFICE OF.

CIVIL LIBERTIES. See UNITED STATES under *Civil Liberties*; SOCIETIES AND ASSOCIATIONS under *Civil Liberties Union, American*.

CIVIL SERVICE COMMISSION, U.S. Through methods described in the article under this heading in the YEAR BOOK for 1940, the U.S. Civil Service Commission continued to fill successfully the heavily increased personnel needs of the Government. Over 680,000 placements (including both additions to the Government service and shifts of persons already employed) were made in the War and Navy Departments alone during the calendar year 1941. During the five months (February-June) of 1941, the Commission's central office at Washington received 416,854 applications and issued 27,342 certificates bearing the names of 239,616 eligibles, whereas during the five months (January-May, 1940) immediately preceding the inauguration of the national-defense program it received 170,036 applications and issued 8,465 certificates bearing the names of 71,090 eligibles. The field offices of the Commission showed similar increases.

On June 30, 1941, the classified service included 990,218 positions, or 72.9 per cent of the 1,358,150 positions in the executive civil service on that date. There were 1,091,743 men and 266,407 women in the executive civil service on June 30, 1941. Within the District of Columbia 42.3 per cent of the employees were women. Outside the District of Columbia 16.1 per cent of the employees were women, this relatively small proportion is caused by the large number of men employed in the Postal Service and in the navy yards, arsenals, and other manufacturing and construction projects.

Civil-Service Examinations. During the fiscal year ended June 30, 1941, 2,622,080 applications for civil-service examinations were received. Ratings were completed and eligible registers established in examinations for which 2,808,344 persons applied. Of these 2,465,104 took the examinations, and 1,288,584 received eligible ratings. The various Federal departments and establishments appointed 252,172 persons from civil-service registers.

During the same period, 242,326 persons applied for veteran preference in examinations. Of those who passed civil-service examinations, 130,829 had been granted veteran preference. Of the appointees to the classified service from open competitive entrance examinations during the fiscal year, 15.3 per cent had veteran preference, including 37,295 men and 40 women receiving preference because of their own service, 1,017 widows of veterans, and 224 wives of disabled veterans.

Recent Legislation and Executive Orders. By Executive Order No. 8743 of Apr. 23, 1941, effective Jan. 1, 1942, the President extended the provisions of the Civil Service Act to include all positions in the Federal executive civil service except tempo-

rary positions, positions listed in Schedules A and B of the civil service rules, and positions expressly excepted by the "Ramspeck Act" of Nov. 26, 1940, or later legislation. The order also provided for the establishment within the Commission of a Board of Legal Examiners to develop a career system for Government lawyers.

The Service Extension Act of Aug. 18, 1941, extended the mandatory reemployment provisions of the Selective Training and Service Act to Government employees, other than temporary employees, who enter upon active military or naval service with the land or naval forces of the Government after May 1, 1940. Several Executive orders have been issued to safeguard the rights of such employees to acquire a classified civil-service status. An act of Aug. 1, 1941 (Public Law 202, 77th Cong.), permits Federal employees who are ordered into active duty with the military or naval forces of the United States to receive compensation in their civilian positions covering their accumulated current accrued leave, in addition to their military pay. Executive Order No. 8937 of Nov. 7, 1941, makes provision for the restoration to civil-service registers of eligibles thereon who serve in the military or naval forces after May 1, 1940.

Regulations governing the establishment and operation of the efficiency-rating review boards provided for by the "Ramspeck Act" of Nov. 26, 1940, were approved by the President on May 1, 1941. A number of the boards are now in operation. An act of Aug. 1, 1941, amended the Classification Act of 1923 to provide for the granting of automatic salary increases, at fixed intervals after their last salary increase of any kind, to employees who maintain sufficiently high efficiency ratings. Executive Order No. 8760 of May 27, 1941, made the written consent of the employing agency a prerequisite to competition in open competitive civil service examinations by probational or permanent Government employees. Similar restrictions had previously been placed upon the transfer, or reinstatement within a short period after separation, of employees of national-defense agencies. Executive Order No. 8781 of June 12, 1941, as amended by Executive Order No. 8914 of Oct. 1, 1941, required the fingerprinting of all persons employed by the Government except such temporary employees as the Civil Service Commission exempted from this requirement.

HARRY B. MITCHELL.

CLASSICS, Study of. See PHILOLOGY, CLASSICAL.

CLIPPER SERVICE. See AERONAUTICS under *World Air Transport*.

CLOSED SHOP. See LABOR CONDITIONS under *Strikes*.

CLOTHING. See FASHION EVENTS; GARMENT INDUSTRY; LIVING COSTS AND STANDARDS, SHOE INDUSTRY; TEXTILES.

COAL AND COKE. The total production of bituminous coal in the United States for the year ending Dec. 27, 1941, was 499,657,000 net tons. With the figures adjusted to the calendar year, the 1941 total production was well over 500,000,000 tons, as compared with about 411,845,000 tons in 1940. Stocks held by industrial consumers were 52,004,000 net tons on December 1. At the November daily consumption rate industrial plants had on hand, December 1, enough to last 45 days. Retail dealers had a 34-day supply.

Production of anthracite coal, January-October, 1941, showed a 9 per cent increase over the same 1940 period, with an output of 46,434,000 net tons, and indicated a 1941 total production of about 56,000,000 net tons. This was exclusive of bootleg

production, which was about 4,500,000 tons in 1940. The Pennsylvania Anthracite Emergency Committee approved a plan to end bootlegging early in 1941 and at the end of the year estimated that 70 per cent of bootlegging tonnage had been absorbed in legitimate operations. The Pennsylvania anthracite industry in November had a production capacity of 70,000,000 tons per year and could enormously increase its output at need. Stocks totaled 63,299,000 tons, November 1, a 53-day supply, compared with 48,665,000 tons, Nov. 1, 1940. The production forecast for May 1, 1941, to May 1, 1942, is 531,000,000 tons. The peak figures of World War I were 502,000,000 tons in 1916, 552,000,000 tons in 1917, and 579,000,000 tons in 1918.

The nation's war effort speeded up the beehive coke output to an all time high of 6,700,000 tons in 1941. Production from by-product ovens plus beehive production was 47,980,221 tons by the end of September, 1941. The increasing demand for metallurgical coke in the West, caused by the expansion of iron and steel producing capacity, gave rise to investigations of western coals by the U.S. Bureau of Mines with the result that coals mined in Washington, Oklahoma, and Kansas were found suitable for making coke.

Prices of coke, September, 1941, were \$6.25 per net ton at ovens of Connellsville furnace, \$7.25 per net ton for beehive coke. September, 1940, prices were \$4.75 and \$5.75 respectively. By-product foundry coke prices at ovens were \$8.50, Birmingham, \$11.50, Chicago, \$13.75, New England. The 1940 prices were \$7.50, \$10.50, and \$12.50 respectively. See BITUMINOUS COAL DIVISION, CHEMISTRY, INDUSTRIAL under *Fuels*, LABOR CONDITIONS; LABOR LEGISLATION under *Strikes*; MINES, BUREAU OF; SHIPPING under *Inland Water Carriers*, TRANSPORTATION DIVISION. For index of industrial activity, see BUSINESS REVIEW.

COAST GUARD, U.S. A very substantial increase in duties of a national defense nature, culminating in the transfer of the Service to the Navy on November 1, characterized the work of the U.S. Coast Guard during 1941. An expansion program never before equaled or demanded of the Service was put into effect.

Highlights of the year's activities follow: Increased participation in the neutrality patrol and other naval operations in the North Atlantic, and the supplying of ships and personnel for naval operations. A substantial increase in the authorized number of enlisted personnel. An increase in the size of the classes entering the Coast Guard Academy. A stepping up of the tempo of the training program for enlisted personnel. Construction of new plant facilities and increase of the forces at the Coast Guard Yard, Baltimore, Md., for the building, reconditioning, and rearmament of ships. The construction of building ways and a floating drydock at the same yard. Special efforts, by means of planes cooperating with ice-breaking vessels, to expedite the opening of navigation upon the Great Lakes in the spring and to retard its closing in the fall, as a national defense measure. The taking over of a national system of radio direction finder stations, of great use to shipping, which had previously been maintained by the Navy. A great increase in the number of officers serving as captains of the port and controlling the movements of ships in all the large ports of the country. The reorganization of the former non-military Coast Guard Reserve into the present Coast Guard Auxiliary, and the establishment of a fully militarized Coast Guard Re-

serve, as the result of recent legislation. Certain important transfers of ships and personnel.

The shipbuilding program has been stepped up to meet the increase in Coast Guard duties and to offset the losses due to transfers to other services. This has been accomplished through the award of contracts to private shipyards and by the adding of shipbuilding ways to the facilities of the Coast Guard's Yard at Baltimore.

Rapidly expanding duties of the Captains of the Port, have required large numbers of small boats. Deliveries under a contract awarded early in the year were resulting in the commissioning of about one new boat a week by December. Another large contract was awarded in November, to provide 100 small boats within three months. In its own building shops the Coast Guard about doubled its production. Authority to purchase small boats in the open market was secured from Congress, and under the Coast Guard Reserve legislation the full complement of 270 boats was commissioned.

The earliest opening of navigation through the Federal locks at Saulte Ste. Marie, Mich., in forty years, took place on Apr. 13, 1941, largely through the efforts of the Coast Guard in breaking channels through ice in strategic parts of the Great Lakes. These locks, located at the falls of the St. Mary's River, control the movement of traffic between Lake Superior and Lake Huron. This early opening of Lakes navigation facilitated national defense activities by reestablishing the flow of iron ore from the Lake Superior region to the steel mills upon the lower Lakes.

The active development of the Coast Guard Reserve, a new fully military organization established by Act of Congress Feb. 19, 1941, has provided much of the additional personnel and small boats demanded by the rapidly expanding task of preventing sabotage and otherwise controlling ship movements in the large ports, a work being done under the direction of the Captains of the Port. Under the law which provides that members of the Coast Guard Auxiliary (a voluntary non-military organization) may offer to the Coast Guard the boats which they own, the Service has been able to acquire, for temporary use, a fleet of 270 small but serviceable craft suitable for inshore patrol duties. In many cases the owners of these boats have received temporary appointments in the Coast Guard Reserve and are now serving aboard their own craft.

At the end of the year the Coast Guard Reserve consisted of approximately 217 officers and 1,620 enlisted men, nearly all of whom were on active duty. The non-military Auxiliary now consists of about 5,000 members, owning about 4,500 boats. About 270 small boats have been taken over by the Coast Guard under the provisions of the recent Act.

Mississippi River flood conditions were made the subject of a special plan of operations designed to cover Coast Guard emergency work on any part of the Western Rivers. This plan, drawn up during the year, will act as a guide to the personnel of the St. Louis District of the Coast Guard, and will also serve to acquaint personnel of certain adjoining districts with the kind of cooperation which they may be called upon to afford. Greater comprehensiveness, because of the increased facilities at the disposal of the Coast Guard since the consolidation with it of the former Lighthouse Service, is the keynote of the new plan. Basically it divides the Mississippi valley into definite sections which serve as administrative units. An action timing plan defining a zero gauge for river conditions at various points, established a height which constitutes a zero

hour at which positive action begins. Important parts of the plan are instructions for equipping and shipping boats, available unloading points, and communications instructions. For the first time comprehensive provisions were made for utilizing the services of the men and boats constituting the Coast Guard Auxiliary.

Weather patrol work in the North Atlantic, inaugurated in 1940, was continued by Coast Guard vessels during the year. See YEAR BOOK for 1940.

The system of aids to marine navigation has continued to expand along normal lines. From a total of 31,000 aids of all types the number increased during the year by nearly 1,000, greatest changes having taken place in the buoys, beacons, and smaller automatic lights. Further extension of such improved waterways as the Intracoastal Waterway, and the deepening of existing channels for the use of vessels of greater draft, resulted in the establishment of a considerable proportion of the new aids. There have been several new radio beacons established at existing lighthouses and radio beacons are now also being established upon buoys, the latter a development of most recent years.

A national system of marine radio direction finders, originally established and developed by the Navy, was turned over to the Coast Guard for operation during the year. This places under unified control the two types of radio aids to marine navigation, namely, the radio direction finders and the radio beacons. These two systems, under one of which the navigator of a ship makes his own observations and plots his own position, and the other where the observations are made by shore stations and transmitted to the inquiring ship by radio, provide long range position finding facilities for a very large portion of the shipping operations in United States waters.

Expansion of the personnel of the Coast Guard and the resultant demand for additional officer material was foreseen some months ago and plans made for increasing the teaching facilities of the Coast Guard Academy, located at New London, Conn. The classes which have entered the Academy in the last two years have been substantially larger than those previously admitted. Entering classes now approximate 150 cadets. An important addition to the sea training facilities of the Coast Guard Academy was the gift to the Service of the yacht *Atlantic*, by her owner, Gerald B. Lambert, rear commodore of the New York Yacht Club.

The need of the Navy for skilled officers and crews for the manning of transports resulted in the Coast Guard providing such personnel, and a special training program is now in operation designed to provide a steady stream of specially trained ratings for this work.

The Maritime Service, the organization for the training of merchant seamen administered by the Coast Guard for the U.S. Maritime Commission, has undergone certain important changes of policy during the year. The program as originally conceived, emphasized training for licensed officers and experienced unlicensed men of the merchant marine. For these officers and men an original 3 months' training period with pay was provided, and after satisfactory completion of this probationary training, the regular enrollees who continued to go to sea in the merchant marine became eligible for one month's annual active duty training with pay in addition to one month's retainer pay for each year. Correspondence courses in their specialties were also made available to all regular enrollees without charge through the Coast Guard Institute.

It became necessary to modify this policy and to

provide thorough training for large numbers of young men who had no previous seagoing experience, because of the greatly expanded merchant shipbuilding program and number of skilled seamen being drawn into the shipbuilding trades. A probationary training course of six months for these apprentice seamen is now provided, except for those being trained as merchant marine radio operators who require a ten months' course. Upon completion of the probationary training course, the now large groups of previously inexperienced enrollees become eligible for the same annual active duty training and retainer pay benefits as are provided for experienced regular enrollees.

With six training stations and five training ships, the training capacity of the Maritime Service has been more than doubled during the past year, and now provides training for approximately 1,000 licensed officers and 5,400 unlicensed men a year. It is expected that shortly the facilities will accommodate 1,200 licensed officers and 10,000 unlicensed men per year.

The U.S. Coast Guard is now operating as a part of the U.S. Navy, as the result of Executive Order No. 8929, signed by President Roosevelt on Nov. 1, 1941. On that date the Coast Guard ceased to function as a part of the Treasury Department. Authority for such transfer in time of war or national emergency has been upon the statute books since 1915. The Commandant of the Coast Guard continues to administer the Service, but directly under the Chief of Naval Operations. Most of the basic functions of the Coast Guard will be carried out in the customary manner. For an account of the more normal and constantly recurring services, see YEAR BOOK for 1940.

RUSSELL R. WAESCHE.

COCHIN CHINA. See FRENCH INDO-CHINA.

COFFEE. World production of coffee in 1940-41, as indicated by statistics of the International Institute of Agriculture, amounted to 4,861 million pounds. As in the previous season, the crop was below the 1934-35 to 1938-39 average of 5,205 million pounds, and in spite of good results in Central America and Africa which compensated only in part for the moderate Brazilian crops. Production in Brazil had been declining for some years due to a succession of unfavorable weather conditions, crop pests, and the giving up of many old unprofitable plantations because of the overproduction crisis. Combination of these factors resulted in a crop approximating 2,756 million pounds in 1940-41 compared to 2,919 million pounds in 1939-40. The crop in other American countries was for Colombia 995 million lb.; Venezuela 112 million lb.; Salvador 143 million lb.; Guatemala 119 million lb.; Mexico 110 million lb.; Costa Rica 51 million lb.; Cuba 68 million lb.; Haiti 66 million lb.; and Dominican Republic 49 million lb.; and the total for American countries was estimated at 4,200 million lb. versus 4,328 million lb. in 1939-40. Coffee production in Netherlands Indies, the main non-American producer, totaled 242½ million lb.

The 1941-42 crop of Brazil, as estimated by the New York Coffee and Sugar Exchange, would total about 12,787,000 132-lb. bags (35 per cent compulsory sale to the National Coffee Department for destruction) compared to 20,850,000 bags in 1940-41 (25 per cent sacrifice quota plus 30 per cent additional for São Paulo) and 21,861,000 bags in 1939-40. The Republic had pledged 7,662,759 bags against the 1930-40 coffee loan and had destroyed 4,222,000 bags from July 1, 1940, to

Oct. 15, 1941. Coffee destroyed to Oct. 15, 1941, amounted to 73,230,000 bags, not including 479,000 destroyed prior to June, 1931, by São Paulo Coffee Institute. Exports from Brazil, 1940-41 totaled 12,879,000 bags, and from Colombia 4,401,289 bags. Coffee delivered in the United States in 1940-41 amounted to 16,415,709 bags compared to 13,886,000 in 1939-40. Revised quotas of the Inter-American Coffee Board totaled 17,640,287 (including Brazil 10,317,904 and Colombia 3,494,774) for the year to end Sept. 30, 1942. This was 1,740,287 bags above the basic quotas and 1,030,193 bags above the final quota for 1940-41. Spot prices in New York ranged from 6 $\frac{1}{2}$ ¢ per pound in January, 1941, to 12 $\frac{1}{4}$ ¢ in August for Santos No. 4 (soft); 4 $\frac{1}{2}$ ¢ to 8 $\frac{1}{2}$ ¢ for No. 7; and 9¢ to 16¢ for Colombian. The OPM Administrator announced a ceiling at coffee prices prevailing at the close of business Dec. 8, 1941, when December Coffee Contract "A" (Basis No. 7) closed at 8.26¢ and December, 1941, Contract "D" (Basis Santos No. 4) closed at 12.31¢. See CHEMISTRY, INDUSTRIAL under *Plastics*.

COFFERDAMS. See FOUNDATIONS.

COKE. See COAL and COKE

COLLECTIVE BARGAINING. See LABOR CONDITIONS

COLLEGES. See UNIVERSITIES AND COLLEGES.

COLOMBIA. A South American republic. Capital, Bogotá.

Area and Population. Area, about 444,900 square miles; estimated population, 9,334,392 in 1941 (8,701,816 at 1938 census). About 20 per cent of the inhabitants are white, 7 per cent Indians, 5 per cent Negroes, and 68 per cent of mixed race. Among the 34,322 foreigners counted in 1938 were 9,942 Venezuelans, 2,887 Americans, 2,977 Germans, 1,944 British, 1,448 Italians, 1,059 Poles, 1,055 French. Estimated populations of the chief cities on Jan. 1, 1940, were Bogotá, 351,723; Medellín, 178,146; Barranquilla, 162,574; Cali, 108,284; Manizales, 90,628; Cartagena, 88,228; Ibagué, 64,830; Cúcuta, 60,194; Bucaramanga, 54,160; Pasto, 51,699.

Defense. Military training for one year and service in the reserve for nine years is compulsory. The army's peace strength in 1941 was 15,850 men, trained reserves, 100,000; active air force, 1,150 men with about 80 planes. Police number about 5,000. The navy has 2 modern destroyers, 3 sea-going gunboats, 3 coastal patrol vessels, and 4 river gunboats. United States military aviation and naval missions were contracted for in 1938 and a French military mission in March, 1940.

Education and Religion. About 19.5 per cent of the urban population and 80.5 per cent of the rural population are estimated to be illiterate. Schools, with the number of pupils in parentheses, are as follows: Kindergartens, 525 (13,400), elementary, 8,562 (576,061); vocational, 37 (3,513); night, 184 (9,989); commercial, 127 (11,823); high schools, 450 (34,599), agricultural, 22 (981); art, 16 (2,490); religious, 29 (1,657), colleges and universities, 63 (7,635). Roman Catholicism is the prevailing religious faith; the Church was disestablished in 1936.

Production. An unofficial estimate placed the value of production of the chief industries in 1940 at about one billion pesos, divided as follows: Agriculture, 40 per cent; livestock, 20 per cent; factories, 20 per cent; mines, 10 per cent. In 1940 coffee, gold, petroleum, and bananas accounted for 97 per cent of the value of all exports. Colombia ranks second to Brazil as a coffee producer. The

1940-41 export crop of coffee was 4,401,289 sacks (of 132 lb.) against 3,781,866 sacks in 1939-40.

Livestock estimates for 1941: Beef cattle, 9,000,000; horses and mules, 1,500,000; sheep, 1,000,000. Mineral output in 1940 included 25,356,000 bbl. of petroleum, 631,927 troy oz. of gold, 4,008 troy oz. of platinum, 260,310 troy oz. of silver, and 3,751 metric tons of land salt (sea salt output, 39,419 tons in 1939). There are about 5,000 industrial establishments having a capital of more than 1,000 pesos. The principal manufactured products are cotton textiles, silk and wool cloth, soaps, vegetable oils, candy and biscuits, beverages, shoes, beer, cigars and cigarettes, leather products, cement. Electrical plants numbered 332 in 1941. As of Dec. 31, 1939, Colombia had 935 stock companies with total assets of 1,029,991,000 pesos (\$587,095,000) and paid-up capital and reserves of 399,637,000 pesos (\$227,793,000).

Foreign Trade. Imports in 1940 were 148,192,000 pesos (183,442,000 in 1939); exports, 166,386,000 pesos (177,054,000). Value of the chief 1940 exports were (in 1,000 pesos): Coffee, 74,023; gold, 41,839; petroleum, 39,920; bananas, 5,610; cattle hides, 1,475. Leading 1940 imports (in 1,000 pesos): Automobiles, 4,068; mining machinery, 3,815; iron and steel bars and sheets, 3,742; raw cotton, 3,634; rubber tires, 2,984; sewing machines and parts, 2,882. The United States provided 74.4 per cent of the 1940 imports by value (54 in 1939); United Kingdom, 8.4 (9.5); Germany, 0.6 (12.8). Of the 1940 exports, the United States took 69.8 per cent (66.9 in 1939), Canada, 11.3 (7.1); Curaçao, 7.8 (8.1), mostly oil; Germany, 0.1 (7.3).

Finance. Actual ordinary revenues in 1940 were 76,946,000 pesos and expenditures 84,487,000 pesos, according to provisional returns. Final results for 1939: Ordinary receipts, 91,359,000 pesos; expenditures, 89,017,000. Ordinary budget estimates for 1941 balanced at 79,218,000 pesos; extraordinary, 3,191,403, special, 2,192,482. The dollar debt of the Colombian Government on Dec. 31, 1940 was \$54,504,000 (\$65,259,000 on Dec. 31, 1939), other external debt, 31,719,000 pesos (32,871,000 on Dec. 31, 1939), internal debt, 89,144,000 pesos (74,956,000 on Dec. 31, 1939). Consolidated internal bonds totaling 40,000,000 pesos were issued Jan. 1, 1941, for conversion and amortization of the internal debt. Also see *History*. Average dollar exchange rates of the Colombian peso in 1940 were: Controlled, \$0.5714, Bank of Republic's rate, \$0.5698; curb, \$0.5181 (\$0.5618 in 1939).

Transportation. Colombia in 1941 had 5,346 miles of navigable rivers, 1,395 miles of railways (mostly government-owned), 7,794 miles of highways in operation and 6,533 miles under construction, and an extensive network of national airlines operated by the government-controlled Avianca Airways. The Pan American Airways system provides international air connections through Barranquilla and Cali. Freight moved by the railways in 1940 totaled 3,140,000 metric tons; by Magdalena River steamers, 898,000 tons (plus 148,484 passengers); by Avianca planes, 5,652 tons (plus 53,357 passengers). The chief seaports are Cartagena, Barranquilla (opened to ocean-going vessels in 1936), and Santa Marta on the Caribbean coast and Buenaventura on the Pacific.

Government. The Constitution of Aug. 5, 1886, vests executive power in a President elected for four years by direct popular vote and ineligible for re-election for four years after completion of his term. A Congress of two houses exercises the legislative power. The Senate has 56 members, elected for 4 years by departmental assemblies; the Cham-

ber of Deputies, 118 members, elected for 2 years by direct suffrage. Extensive amendments to the Constitution were voted in 1936 (see 1936 YEAR BOOK, p. 174 f.). President in 1941, Dr. Eduardo Santos (Liberal), who assumed office Aug. 7, 1938. In the 1939 elections 77 Liberals and 41 Conservatives were elected to the Chamber of Deputies and 37 Liberals and 19 Conservatves to the Senate.

HISTORY

Political Events. The split between the radical and conservative wings of the Liberal party widened during 1941, offering the Conservatives an opportunity to regain control of the Government, which they held for 40 years prior to 1930 (see YEAR BOOK for 1940, p. 149, for background). Ex-President Alfonso López, leader of the radical Liberals, returned to Colombia on January 19 from a long stay in New York and commenced his campaign to secure the Liberal nomination for the Presidential elections in May, 1942. The conservative or anti-Lopista wing of the Liberals, to which President Santos belonged, supported the candidacy of Carlos Arango Vélez.

The major issue in the elections held Mar. 16, 1941, for a new Chamber of Deputies and for departmental legislative assemblies throughout Colombia was the fight for control of the Liberal party. López and his supporters attacked the internal social and economic reform policies of the Santos administration as ineffective and inadequate. They also criticized the Santos Government for its close collaboration with the foreign policy of the United States, which they charged threatened to draw Colombia into the European War. Dr. López expressed himself as willing to work with the United States but as unwilling to accept commitments of a vague and far-reaching character. A third party to the controversy was Dr. Laureano Gómez, pro-Axis head of the Conservative party. He violently attacked the United States and opposed any political or military collaboration with Washington except in case of an attack upon Colombia by a third party. But Gómez's policy was likewise attacked by a minority of pro-United States Conservatives who favored the Santos foreign policy.

The López wing of the Liberals gained a victory in the Congressional elections, capturing 42 seats in the Chamber of Deputies as against 39 by the anti-López Liberals and 50 by the Conservatives. López adherents also controlled more seats than the rival Liberals in the departmental legislatures. When the Liberal party convention met in Bogotá August 16-19 to nominate a Presidential candidate, an open break occurred. Lacking the two-thirds majority needed to nominate, 62 of the 120 delegates proclaimed López as their candidate and empowered him to name a new national Liberal committee to replace that dissolved through the resignation of anti-López committeemen. The 58 anti-López delegates then withdrew from the convention and named their own executive committee. Gómez, the Conservative leader, encouraged this split by announcing on August 10 that the Conservatives would not enter a candidate in the Presidential race but would support the nominee of the anti-López Liberals.

When Congress reconvened, 13 anti-López Liberal Senators and all of the Conservatives in the Senate offered to resign (September 22) in protest against the candidacy of Dr. López. In the Chamber of Deputies the anti-López Liberals and Conservatives combined a few days later to elect Dr. Alfonso Aguirre, conservative Liberal, as Controller

General of the republic. Amid extraordinary excitement and disorder, the adherents of Dr. López abandoned the Chamber when the voting started. The pro-López Liberals more than offset this setback by their victory in municipal elections held October 5. With the anti-López Liberals offering no candidates, the Liberals captured 382 municipal councils, including those of Bogotá and all the departmental capitals, while the Conservatives won control of 162 councils. Negotiations for healing the breach between the Liberal factions were then renewed.

The Cabinet resigned on October 16 in support of War Minister José Joaquín Martínez Castro, who had been under attack, chiefly in connection with the sale of a Colombian-owned ship to U.S. interests. President Santos retained the Ministers of Foreign Affairs, Interior, and Finance in the reorganized Cabinet named October 21.

Anti-democratic Movements. The Liberal Government during the year continued its struggle with European and native Nazi-Fascist groups. The small Colombian Communist party also became more active, holding its first national convention in Bogotá August 4-7, with 300 delegates in attendance. Nazi-Fascist propaganda was rife (see *New York Times*, issues of Apr. 24, 28, 30, and Nov. 6, 1941). But though taking effective advantage of the anti-democratic bias of many Colombian Conservatives, it appeared to make little headway against the Government and public opinion, which was overwhelmingly pro-democratic. The Government displayed growing vigilance, making occasional arrests of German Nazis charged with subversive activity or suspected espionage. On July 21 the U.S. Commerce Department reported that Paul von Bauer, a pioneer in the development of the Scadta system in Colombia and other German airlines in South America, had abandoned his activities in Colombia as a result of "the recent restricting regulations of the United States Government and the hearty cooperation of the President of Colombia."

On September 11 President Roosevelt stated in a speech that secret Nazi landing fields had been discovered in Colombia within easy striking distance of the Panama Canal. A communiqué issued by the Colombian War Minister tended to support this statement, but the Senate at Bogotá on September 12 denied Mr. Roosevelt's assertion. The Colombian Confederation of Workers on September 15 requested the Government to investigate and suppress fifth column activities. It was announced November 7 that the Government had arranged to police all Colombian airports taken over from the German Scadta system in 1939-40 by the Avianca Company under Colombian-United States management.

Evidence of anti-Government propaganda in the army was seen in the arrest of a number of suspected fifth columnists early in August. The War Minister announced August 4 that 2,500 soldiers of the Bogotá garrison had been confined to their barracks for the purpose of ascertaining the progress made by anti-democratic and totalitarian propagandists. The press reported that the Government's action had balked a German Nazi plan for infiltration into the army in preparation for eventual subversive action. On August 9 the President ordered strict enforcement of the 1940 decree for the expulsion of aliens engaged in propaganda on behalf of the belligerent countries. Measures were taken to curb anti-democratic influences in the schools and in October new restrictions were imposed on travel by foreigners in Colombia.

Foreign Relations. In his annual message to Congress on July 20 President Santos clarified his Government's foreign policy. Pointing out that the Panama Canal was vital both to the defense of the United States and to Colombia's economy, he said Colombia had an obligation "to see that it (the Canal) can never be prejudiced or attacked from our territory." This obligation, he said, could be fulfilled without sending Colombian soldiers beyond the republic's frontiers. He asserted that "the question of naval, military, or air bases for the collaboration of foreign and national forces in our common interest has not arisen." No such bases seemed necessary, the President said, but if the question did arise Colombia would have to "resolve it with her own resources and under her sole authority." At the same time he strongly emphasized his Government's support of the cause of democracy and continental solidarity as against totalitarianism.

On May 1 the Export-Import Bank of Washington undertook to extend a \$12,000,000 credit to the Colombian Government for "materials, equipment, and services." The loan was approved by the Colombian Senate on September 28 and by the Chamber of Deputies on October 4. It was to be used for roads, irrigation projects, and hydroelectric plants. The Senate on November 7 unanimously approved a motion stating that it was unacceptable that United States blacklists of pro-Axis individuals and firms should include "individuals and societies in the Ibero-American republics, without the respective governments having been consulted previously . . ."

However the day after Japan's surprise attack upon the United States, the Colombian Government declared it to be a clear case of aggression. Diplomatic relations with Japan were broken. The Government reaffirmed its adherence to the policy of inter-American solidarity and cooperation, and declared it would cooperate in continental defense and in the defense of the Panama Canal. On December 11 all Axis funds were frozen and it was decreed that all communications across the border must be in the Spanish, Portuguese, French, or English languages. Diplomatic relations with Germany and Italy were broken off on December 19. Before closing its regular session on December 16, Congress granted President Santos extraordinary powers.

Negotiations with the Vatican for the adjustment of Church-State relations in Colombia in accordance with the 1936 amendments to the Constitution (see YEAR BOOK for 1936) were reported to have been completed in October. In November Colombia and Mexico exchanged Ambassadors instead of Ministers. On April 5 the Colombian and Venezuelan Foreign Ministers met in the historic church at Cúcuta where the First General Congress of Greater Colombia met in May, 1821. There they signed a treaty settling a 100-year-old boundary dispute, providing for free navigation on their common rivers, and laying the groundwork for closer economic and commercial relations.

Economic Situation. Economic conditions in Colombia became more favorable during 1941 due chiefly to the increase in coffee prices produced by the Inter-American Coffee Agreement. Production of gold and petroleum also increased, and local manufacturing was expanding. These factors served to offset the shortage of shipping, severance of trade relations with Europe, restriction of imports from the United States due to defense requirements in that country, decline in banana production and shipments, and rising cost of living.

See ARCHITECTURE; LEND-LEASE ADMINISTRATION, WORLD WAR.

COLORADO. A mountain State. Area: 104,247 sq. mi., including 280 sq. mi. of inland water. Population: (1940 census) 1,123,296. The urban population comprises 52.6 per cent of the total (U.S. average, 56.5 per cent); non-white population, 1.5 per cent (U.S. average, 10.2); elderly (65 years and over), 7.4 per cent. Colorado ranks seventh among the States in area, 33d in population, and 39th in density, with an average of 10.8 persons per square mile. The largest city and capital is Denver with 322,412 inhabitants. There are 63 counties and eight cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Inez Johnson Lewis, Superintendent of Public Instruction, there were 229,022 pupils enrolled in the public schools of Colorado during the school year 1939-40, 149,145 in elementary schools and 55,564 in secondary schools. Teachers numbered 9,552 and received an annual average salary of \$1,349.82. Total expenditures for the year were \$24,260,669.26. For higher education, see *Colorado* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 12,100, of which 8,273 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 355,309; 292,626 were private and commercial automobiles, 1,166 busses, and 58,318 trucks and tractor trucks. Gross motor-fuel consumption was 251,877,000 gallons. Net motor-fuel tax receipts were \$8,291,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$2,797,000.

Railways of all classes extended 4,560 miles (Dec. 31, 1939) 1.94 per cent of the total mileage in the United States. Class I steam railways (3,949 miles) reported 7,883,207 tons of revenue freight originating in Colorado in 1940 and 7,308,394 tons terminating in Colorado. There are 37 airports and landing fields in the State (nine lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 224 civil aircraft in the State and 1,260 airline transport, commercial, and private pilots (1,109 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 6,140,500, as compared with 5,489,000 acres in 1940. According to the latest census, there are 51,436 farms, valued at \$388,343,847, averaging 612.9 acres each. Farm population numbered 252,958 or 22.5 per cent of the total. Leading crops with production were: Wheat, \$22,783,000, 25,036,000 bu.; hay, \$14,510,000, 2,310,000 tons, corn, \$10,819,000, 15,028,000 bu.; commercial truck crops, \$8,123,000; potatoes, \$6,702,000, 11,968,000 bu.; barley, \$6,456,000, 15,372,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 1,298 manufacturing establishments in Colorado, employing 23,716 wage earners who received \$23,391,933 in wages for the year. Total value of products was \$221,642,666, value added by manufacture, \$91,256,161.

Mineral Production. Leading mineral products are. Coal, of which 6,516,000 net tons were produced in 1940 (5,890,000 net tons valued at \$14,548,000 in 1939); gold, 377,503 fine ounces produced in 1941 (preliminary) valued at \$13,212,605; silver, 7,234,487 fine ounces in 1941 (preliminary) \$5,144,524. The 1941 production of silver showed a decrease of about 25 per cent from the preceding year; gold

increased about 3 per cent. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$64,071,621 or 1.51 per cent of the total for the United States. Colorado ranks 17th among the States in value of mineral products

Trade. According to the 1940 census there were 2,296 wholesale establishments in Colorado, employing 13,675 persons, reporting net sales for 1939 of \$435,126,000 and annual pay roll of \$20,433,000. There were 16,785 retail stores with 45,083 employees, reporting sales of \$409,103,000 and pay roll of \$43,503,000. Service establishments numbered 6,186, employing 9,422 persons for \$8,221,000 per year, and reporting a business volume amounting to \$27,473,000. The leading business center of the State is Denver which reported wholesale sales of \$340,989,000 and \$177,963,000 retail

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Colorado was \$40,281,000. Under the Social Security program, financed by Federal funds matching State grants, 42,551 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$33.79 (U.S. average pension, \$21.08); 15,572 dependent children in 6,362 families received average monthly payments of \$30.28 per family (U.S. average, \$32.73), and 607 blind persons received \$31.54 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 10,013 and received \$14.19 per case (average payment for 41 States, \$22.68)

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses). CCC, 2,057 (\$136,000), NYA student work program, 3,240 (\$24,000), NYA out-of-school work program, 3,083 (\$70,000), WPA, 16,939 (\$1,149,000); other Federal emergency projects, 210 (\$38,000); regular Federal construction projects, 4,863 (\$688,000). The Farm Security Administration certified subsistence payments totaling \$29,000 for the month to 780 cases.

Legislature. The General Assembly convenes in regular session on the first Wednesday of January in odd years. It is composed of 35 Senators (18 Democrats and 17 Republicans in 1941) and 65 Representatives (29 Democrats and 36 Republicans). The following summary of important 1941 legislation comprises excerpts from *The Denver Post*, Apr. 13, 1941:

From birth certificates to burials—nearly every realm of human activity was affected in one way or another by the bills passed by the thirty-third general assembly, which finally closed its session on Friday. The 1941 crop of laws was the second largest in the history of the State

Reorganization. Tax collecting agencies were consolidated in a new department of revenue. The executive council, sometimes called a "board of five governors," was abolished and an advisory council substituted. The governor was given the power to determine how many employees each department may have. A number of boards were abolished. The salary of the governor, beginning in 1943, will be increased from \$5,000 to \$10,000 a year.

Taxes. The service tax was reenacted. Sixty-five per cent of the State income tax revenues were placed in the State general fund as compared with a slightly higher diversion to the general fund two years ago. Nonresidents were exempted from income and inheritance taxes under certain conditions although they remain in the State for longer than six months. Double taxation on sales of cars and machinery upon which old cars or machinery are traded in was abolished. Taxes on the caravanning of motor vehicles were increased. The inheritance tax law was revised.

Defense. Authorization to create a special defense force to maintain order while the Colorado National Guard is absent from the State on Federal duty was the main feature of the State defense program enacted. The Assembly also gave the governor authority to create a State defense council which will integrate all phases of the State's program with the national program. An act aimed at subterfuge and subversive elements will give authorities a strong weapon to use in protecting the State against such activi-

ties, and creation of a "little Dies" committee of legislators to investigate un-American activities will provide an organization that can keep constant watch over "fifth column" groups.

Elections. The most important change in the election laws was an act changing the regulations governing the initiating of constitutional amendments or statutes by petition. It made it a felony to secure petition signatures for hire and provided a number of new safeguards. Another act greatly simplified the method of handling absentee ballots. Other changes authorized use of voting machines in Denver and provided that in the future voters will vote directly for presidential and vice-presidential candidates by name instead of by presidential electors.

Welfare and Labor. A 30-day "cooling" period is to be required before a strike may become effective. Tips and gratuities given an employee may not be considered part of his pay. Laws relating to aid to the blind and dependent children were changed to conform to Federal laws. The appropriation for tuberculosis control was increased by \$100,000, and \$3,700,000 was appropriated for direct relief for the next biennium. Minor changes were made in unemployment and workmen's compensation and the old-age pension laws.

Insurance. New companies were required to put up deposits with the State before they can sell stock insurance agents for cause shown may be required to take examinations to determine their fitness. The principal insuring company was made responsible for the premium tax due from reinsuring companies. The ban on writing insurance on children under the age of ten years was removed. Mutual burial societies were required to pay benefits in cash instead of in funeral services.

Stores. Filling stations were exempted from the chain store tax. Liquor dealers were brought under the fair trade practices act. The penalty provision putting out of business any store found guilty of three violations of the unfair practices act was repealed.

Liquor. Tax collecting functions of the liquor department were transferred to the new department of revenue, but the Secretary of State still directs the enforcement of the liquor laws. He was given broad powers to regulate the industry. Bonds no longer will be required of liquor dealers.

Other Laws. School boards were given the authority to set up teacher retirement plans to which the teachers themselves will contribute. Soil conservation districts were made more difficult to organize. Counties are allowed to set up their own agricultural research laboratories. Bank regulations were tightened to require banks to build up larger reserves. A new industrial bank code was adopted. The Legislature approved the Republican River compact.

Finances. Total tax collections in Colorado for the fiscal year ending in June, 1941, were \$42,192,000 (1940, \$39,826,000). Total sales taxes amounted to \$20,088,000, including general sales, \$9,416,000, and motor fuel, \$8,470,000. Taxes on specific businesses ran to \$4,543,000, general and selective property, \$5,154,000, and unemployment compensation, \$4,662,000. The net income taxes were \$3,560,000. Cost payments for the operation of general government totaled \$38,678,000 in 1939, the latest year available. (Revenues for the general government for that year were \$52,216,000.) Cost of operation per capita was \$34.81. Total gross debt outstanding in 1941 was \$26,145,000, as compared with \$8,162,000 in 1932.

Officers and Judiciary. The Governor is Ralph L. Carr (Rep.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, John C. Vivian, Secretary of State, Walter F. Morrison; Attorney General, Gail L. Ireland; State Auditor, Charles M. Armstrong, State Treasurer, Homer F. Bedford. Chief Justice of the Colorado Supreme Court is Francis E. Bouck, there are six associate members elected by popular vote for 10-year terms. See CONSUMERS' COOPERATIVES; LIVESTOCK; PRISONS; TUNNELS.

COLOR PROCESSES. See PHOTOGRAPHY.

COMETS. See ASTRONOMY.

COMINTERN. See COMMUNISM, FASCISM.

COMMANDOS, British. See MILITARY PROGRESS.

COMMERCE. Compare TRADE.

COMMERCE, U.S. Department of. See separate articles on the PATENT OFFICE; STANDARDS, NATIONAL BU-

REAU OF. For reports of the Department, see TRADE, FOREIGN, ETC. The Secretary of Commerce in 1941 was Jesse H. Jones.

COMMERCIAL BUILDINGS. See ARCHITECTURE.

COMMODITY CREDIT CORPORATION. See AGRICULTURE, U.S. DEPARTMENT OF; BUSINESS REVIEW under *Commodity Prices*.

COMMONWEALTH FUND. This endowment, established in 1918 by Mrs. Stephen V. Harkness "to do something for the welfare of mankind," and later increased by gifts from the founder and from Mr. Edward S. Harkness, President of the Fund from its inception until his death on Jan. 29, 1940, now amounts to approximately \$49,000,000. In the year ending Sept. 30, 1941, the Fund appropriated some \$1,800,000. Of this total more than half was devoted to the promotion and maintenance of physical health. Sums amounting to \$550,000 were set aside for philanthropic needs arising out of the war. Public health activities, designed to raise standards of rural service, centered in Tennessee, Mississippi, Oklahoma, and Alabama. The thirteenth in a group of rural community hospitals built or remodeled with aid from the Fund was completed in 1941; one more was under way in December, 1941. These hospitals stress opportunities for professional education as well as standards of medical, nursing, and technical service. Fellowships were offered to instructors in medical schools, without restriction as to field of study, as a means of encouraging able young investigators and strengthening teaching resources; continued aid was given to departments of preventive medicine and psychiatry, to extension teaching and other forms of postgraduate medical education, and to teaching arrangements designed to promote interplay between pediatrics and psychiatry. Some \$366,000 was given for medical research. The Commonwealth Fund Fellowships for British graduate students at American universities were suspended, but grants were made to assist the research of several British scientists in this country. The Fund continued to aid child guidance enterprises in England; maintained an advisory service for community mental hygiene clinics in the United States; supported studies in administrative law and legal history; and during the year published eight books and pamphlets of educational significance in its fields of operation. The Fund directors for 1941 were Malcolm P. Aldrich, President, Phil W. Bunnell, Samuel H. Fisher, George Welwood Murray, Dean Sage, and William E. Stevenson. Headquarters are at 41 East 57 Street, New York City.

COMMUNICATIONS. For the communications industry as a whole, 1941 was an all-time record year, a situation brought about largely by the rapid growth of war efforts in the Western Hemisphere. European cable traffic suffered, but radio, telephony, and telegraphy were called upon for enormous expansion of facility to accommodate traffic in some instances several times that of 1940.

Censorship of cable and radiotelegraph and radiotelephone was instituted in a prearranged pattern within a few hours after the Japanese attack on Pearl Harbor. This was followed closely by government controls enabling the military services to use, take over, or shut down any communication facility of strategic importance. The industry was assured by Chairman J. L. Fly of the Defense Communications Board (q.v.) that the government "had no intention of taking over the wire services" or of interfering with operations beyond the dictates of military needs. No censorship of domestic

communications had been imposed by the year-end, but all radio amateurs not specifically authorized for civilian-defense operations were shut down to facilitate the operations of the monitoring patrols of the Federal Communications Commission in their efforts to locate and liquidate spy or other illegal stations. Communications with Axis belligerents and adherents were severed and, initially at least, communications with all other nations were required to be written in plain English; Spanish was permitted subsequently.

By the end of 1941 allocations and priorities procedures and machinery covering the entire industry had been set up under a dual arrangement whereby the Defense Communications Board would act as the policy-making and advisory agency, and the newly created communications division of the Office for Production Management (q.v.) would serve as the implementing agency through which the industry would receive its authorizations for strategic metals and materials. Because of the essential nature of communications services to all branches of military, civilian, and industrial service, the industry was early given a relatively high priority rating.

Indications at the end of the year were that the FCC would divert most of its attention and staff from regulatory to defense work. By year-end about half of FCC's 800-odd Washington, D.C., employees and two-thirds of its 600-odd field workers were engaged in war work.

See articles on RADIO; TELEGRAPHY, TELEPHONY.
G. ROSS HENNINGER.

COMMUNISM. The German attack upon Soviet Russia beginning June 22, 1941, produced the fifth major shift since 1921 in the orthodox Communist (Stalinist) strategy of world revolution. The objective remained the same—consolidation of Communist power in the Soviet Union as a base for the overthrow of capitalism everywhere with the aid of the masses in industrialized countries and of the native populations in colonial possessions. But the German invasion forced the directors of the Communist International (Comintern) in Moscow temporarily to abandon their preparations for revolution abroad and concentrate upon the defense of Russia, the "Socialist fatherland."

The New Party Line. To this end Communists the world over were instructed to discard the tactic of neutrality, adopted upon the signing of the Hitler-Stalin nonaggression pact of Aug. 23, 1939 (see YEAR BOOKS for 1939 and 1940). Communist parties everywhere scrapped their propaganda against "Anglo-American imperialism" and "capitalist war," their advocacy of a "Socialist peace" with Hitler, and their sabotage of defense preparations in the capitalist democracies. Instead they sought to rally the peoples of the world behind new slogans of "all aid to the Soviet Union and Great Britain," "war to the death upon Hitlerite Germany," and "a people's front" of all "democratic" forces against fascism. This complete reversal of the Communist party line had profound repercussions the world over.

Previous Status of Movement. Previous to June 22, the status of the Communist movement in the various parts of the world remained substantially the same as in 1940 (see YEAR BOOK for 1940, p. 153). The policy of tacit collaboration with Nazi Germany made the Communists increasingly unpopular in all of the democratic countries. They lost ground steadily among the Allied peoples and the countries sympathetic to the Allied cause.

In Chile, Mexico, and Cuba, the Latin American

countries in which communism had gained the strongest influence, the Communist parties found themselves on the defensive and in imminent danger of dissolution. In China the substantial gains registered by the Communists in 1940 were partly cancelled by the reassertion of the Chungking Government's authority over Communist-controlled areas and military forces and the ensuing civil warfare (see CHINA under *History*). This action by the Chungking authorities was possible because the increased aid furnished by the United States and Great Britain made Chiang Kai-shek less dependent upon the Soviet Union.

In the Balkans and Central Europe, the Communists lost much of the ground gained in 1940 when Bulgaria entered the Axis and Yugoslavia and Greece were conquered by Germany. It was in the Balkans that the clearest indications of the impending Russo-German conflict were given in the spring of 1941. Local Communists and Soviet diplomats and agents worked ceaselessly to prevent Bulgaria's adhesion to the Axis and to stiffen Yugoslav resistance to German pressure. The triumph of the Axis was followed by ruthless efforts to extirpate communism in both countries.

Effect of Communist-Nazi Clash. The reversal of the Communist party line following Hitler's invasion of Russia, combined with the unexpectedly strong resistance of the Red Army, helped to restore the waning influence and prestige of the Communist movement in some parts of the world. The new anti-Hitler party line brought the Communists into closer alignment with other leftist groups. Cessation of Communist attacks upon the capitalist democracies and the new Communist stand against Axis intrigues in the Western Hemisphere made possible the reconstitution of the Popular Front in Chile. The agitation to outlaw Communist parties in the United States, Chile, Cuba, and Mexico lost much of its support.

In Great Britain and the British dominions, the Anglo-Soviet alliance helped to dissipate some of the odium attached to the native Communist parties. However in Australia, Canada, and Britain alike the governments and non-Communist political parties rejected Communist offers of collaboration in domestic politics and fought Communist penetration into non-Communist organizations. The British Government ignored the agitation for lifting the ban on the official Communist organ, the *Daily Worker*. The Canadian Government maintained its ban against the Canadian Communist party. In Australia the Federal Labor party voted to oust members who joined or associated with pro-Communist organizations.

The termination of Soviet aid to China in October, due to the strain of the war with Germany, weakened the Chinese Communists in their game of jockeying with the Chungking Government for a favorable position at the end of the Sino-Japanese war. But in Europe, and particularly in France, the Nazi "crusade" against Bolshevism gave the Communist movement new strength and prestige. The Red Army's stubborn resistance aroused hope of liberation from German rule among all the subject peoples of the Continent. The renewal of anti-Nazi agitation by Communist parties in the occupied countries demonstrated their capacity to maintain well-knit organizations despite all measures of repression. Moreover the Germans and their allies gave communism much undeserved prestige among the conquered peoples by labeling thousands of executed patriots as "Communists."

United States. American Communist Party. The Communist party in the United States during 1941 bore

the brunt of the resentment aroused among all classes by Stalin's tacit collaboration with Hitler. The political somersault performed by the party after the German attack upon Russia confirmed the widely held opinion that it was "just a tool of Stalin's." The American Institute of Public Opinion reported on June 17 that a nation-wide test poll revealed 71 per cent of the population favoring legal prohibition of membership in the Communist party and 22 per cent opposed.

The party was further handicapped by the elimination of two of its three outstanding leaders. One of them, Clarence A. Hathaway, former editor of the *Daily Worker*, was expelled by the Communist national committee in January. On February 17 the U.S. Supreme Court unanimously ruled that Earl Browder, general secretary of the party, must serve a four-year sentence imposed in 1940 for passport fraud. He started his jail term March 25. Robert Minor, another Communist party wheelhorse, succeeded Browder as acting general secretary.

Anticipating legal dissolution of the Communist party, its leaders prepared to carry on their work behind the screen of a new political party. On March 28 Representative Vito Marcantonio of New York City, a leader of the pro-Communist faction of the American Labor Party, announced that "a people's party and a peace party" was being organized on a national basis through amalgamation of various extreme leftist organizations. Early in June four New York State Communist leaders testified before a legislative investigating committee that all Communist party records in the State dealing with membership or dues payments had been destroyed on order of the national headquarters.

These preparations for going underground were discontinued when the Russo-German war gave the party a new lease on life. On the night of June 22 the Communist party headquarters issued a statement calling for "full support and cooperation with the Soviet Union in its struggle against Hitlerism." At the end of June the national committee of the party met secretly in New York to draft the official "line" in accordance with instructions received from Moscow. A manifesto issued June 29 proclaimed the new policy as follows: "Defend America by giving full aid to the Soviet Union, Great Britain and all nations who fight against Hitler." It declared that the German attack on the Soviet Union "imparts a new and sinister aspect to the menace of Hitlerism for the American people, the British people, and the people of the world. There can be no peace . . . without the complete destruction of Hitler and Hitlerism."

In line with this new policy, the Communist party began violent attacks upon isolationist spokesmen as "fascists" and "fifth columnists." Discarding its former slogan, "The Yanks Aren't Coming," it called for all-out participation in the war by the United States. President Roosevelt and other interventionists, whom the Communist press formerly denounced as "warmongers" and "greedy imperialists," were now strongly supported.

The numerous Communist-front organizations swung into line behind the official policy. There was a noticeable decline in Communist-inspired strikes in defense industries, and Communist influence was thrown behind greater production of defense articles. At the same time the party began an agitation for the release of Browder. Under cover of its self-proclaimed policy of leading the fight for the workers' democratic rights against "Hitler fascism," the Communists sought to regain lost ground and to assume direction of the deep anti-Hitler sentiment of the masses. In the New

York City election of November 4, the party withdrew its own candidates for the higher city offices and supported Mayor LaGuardia and his running mates despite their repudiation of communism. One Communist candidate was elected to the City Council under the proportional representation system—the first in the city or State to win elective office on the Communist ticket.

Communism and Labor. More significant than the political activity of the American Communist party was the influence exerted by Communists in non-political and professedly non-Communist organizations, especially in the labor movement. The extent of this influence was clearly revealed during the first half of the year when Communist labor leaders systematically hampered the production of defense materials and the Administration's policy of aid to Britain. The Communists also worked to undermine the workers confidence in the National Government and in machinery for the adjustment of labor disputes such as the National Defense Mediation Board.

Communists were declared mainly responsible for major interruptions of defense production through strikes in the North American Aviation Co. plant at Inglewood, Calif., the Cleveland plant of the Aluminum Co. of America, the Detroit plant of the Bohn Aluminum Co., the Milwaukee plant of the Allis-Chalmers Manufacturing Co., the Chicago plant of the International Harvester Co., and other important factories. Two former Communist party leaders, Richard Krebs (Jan Valtin) and Benjamin Gitlow, the House Military Affairs Committee at Washington, the Dies Committee, and many other authorities on the Communist movement supported these charges.

A poll by the American Institute of Public Opinion indicated that 78 per cent of the American people attributed a responsible part of the strikes in defense plants to Communists. Communist influence in large C.I.O. unions in the marine transport, communications, newspaper, lumber, longshore, office, cannery, farm equipment, and civil service fields was further demonstrated when these unions followed the June change in the Communist party line with striking unanimity. A few A.F.L. unions likewise were shown to be under Communist domination.

These revelations of Communist control in many vitally important unions produced numerous revolts by non-Communist rank-and-file majorities. In some cases they succeeded in ousting Communists from strategic positions; in others they failed. Among the unions that took action during the year to oust Communist or pro-Communist leaders were Actors Equity Association, the A.F.L. Brotherhood of Painters, Decorators, and Paperhangers, the Industrial Union of Marine and Shipbuilding Workers, American Federation of Hosiery Workers, Textile Workers Union, American Federation of Teachers (which revoked the charters of two Communist-controlled locals in New York City and one in Philadelphia), and the United Automobile Workers.

On the other hand, the Communists succeeded in retaining control of such important unions as the United Electrical, Radio, and Machine Workers, the State, County, and Municipal Workers of America, and the National Maritime Union when the issue was raised in their annual conventions. At the annual convention of the Congress of Industrial Organizations in November, the Communist-dominated unions split with their former ally, John L. Lewis, and voted to support the foreign policy of the Roosevelt Administration. Also see **LABOR CONDITIONS**.

Other Anti-Communist Measures. The widespread hostility toward communism was reflected in other official and unofficial actions. New Jersey and Illinois joined the ranks of those States barring Communist candidates from places on the ballot, while Florida outlawed both the Communist party and the German-American Bund. However in more than half of the State legislatures bills aimed at the political rights of Communists and Bundists failed of passage. A third Communist was convicted under Oklahoma's criminal syndicalism law on April 30 and sentenced to 10 years imprisonment and a \$5,000 fine.

A Federal grand jury in St. Paul on July 15 indicted 29 officers and members of the Socialist Workers party, alleged Trotskyist branch of the Communist movement, on charges of seditious conspiracy and conspiracy to create insubordination in the armed forces of the United States. On December 1, 18 of the defendants were convicted on the latter charge. All were acquitted on the seditious conspiracy charge. Sentences of 16 months in prison were imposed on 12 of those convicted and sentences of one year on the other six. A large number of Communist members or sympathizers employed in private industrial plants on national defense contracts were reported to have been discharged as a result of the investigations made by the Dies Committee.

In February the Federal Government reopened deportation proceedings against Harry Bridges, West Coast C.I.O. leader, on the basis of a report submitted by the Federal Bureau of Investigation charging that Bridges, a native of Australia, was a member of the Communist party. Bridges again denied the charge, but on the basis of evidence taken in San Francisco a special examiner for the Department of Justice recommended his deportation. The U. S. House of Representatives on October 6 again voted to deport Bridges, but no action was taken by the Government up to the end of the year.

Three agents of the Bookniga Corporation, a New York City book store specializing in the distribution of Soviet propaganda literature, were convicted in the U. S. District Court of Washington, D C., on July 14 of failing to register the corporation as a propaganda agent of a foreign principal. Evidence was introduced to show that the concern distributed propaganda material at a fraction of its cost, and that it served as the agent of the Soviet Government.

A purge of Communists on the faculties of New York's city-maintained colleges was inaugurated following the revelation before a State legislative investigating committee of subversive propaganda by campus units of the Communist party. On March 17 the city's Board of Higher Education unanimously adopted a resolution making membership in any Communist, Nazi, or Fascist group sufficient grounds for discharge of a faculty member. A tutor in English at City College, suspended for Communist proselytizing, was convicted of perjury for testifying falsely before the Rapp-Coudert legislative committee.

Charges of heavy infiltration of Communists and fellow-travelers into Federal services were made by Representative Dies, chairman of the House Committee on Un-American Activities. He named Price Controller Leon Henderson and more than 1,000 others as falling in this category. See **DIES COMMITTEE**. The U. S. House of Representatives on December 19 passed a bill requiring the Communist party and German-American Bund organizations to register as agents of foreign governments, and to

identify for public record their officers, directors, and members.

See AUSTRALIA, CHILE, CHINA, COLOMBIA, CUBA, DENMARK, ESTONIA, FINLAND, FRANCE, GERMANY, GREAT BRITAIN, LATVIA, LITHUANIA, MEXICO, NETHERLANDS, NEW ZEALAND, POLAND, SLOVAKIA, and UNION OF SOVIET SOCIALIST REPUBLICS, under *History*. Compare with FASCISM.

COMMUNITY CHESTS AND COUNCILS, Inc. A membership association of community chests and councils of social agencies, organized in February, 1918, as the American Association for Community Organization. For organization and purpose see the 1939 YEAR BOOK.

Of the 598 chests and councils in operation, 575 are in continental United States, 2 in the territory of Hawaii, 1 in the Virgin Islands, 18 in Canada, and 2 in foreign countries. All but 4 cities of 100,000 population and over in the United States have community chests. Approximately 10,000,000 contributors in 598 cities gave \$90,587,589 to community chests to be used for private social work in their communities during 1941.

The officers in 1941-42 were: president, Robert Cutler, Boston, Mass.; vice-presidents, John Stewart Bryan, Richmond, Va., and Kenneth Sturges, Cleveland; treasurer, J. Herbert Case, Plainfield, N. J.; secretary, Lynn D. Mowat, Los Angeles, Calif. Allen T. Burns is executive vice-president.

COMMUNITY TRUSTS. Distribution of charitable funds in 1940 by 76 community trusts and foundations in continental United States, Canada, and Hawaii totaled \$2,225,000, the largest annual outpayment by these agencies in any year. The aggregate of appropriations in 1939 was \$1,278,000.

The resources of community foundations have risen from \$40,000,000 in 1934 to \$50,000,000 in 1939 and to \$52,500,000 at the close of 1940. The largest amount of capital funds was held by The New York Community Trust with \$9,409,021, followed by the Chicago Community Trust with \$9,126,048 and the Cleveland Foundation with \$6,745,785. Other holdings in excess of \$1,000,000 were reported from community trusts in Boston, Winnipeg, Indianapolis, Minneapolis, Richmond, Philadelphia, Los Angeles, and Buffalo.

Winston-Salem Foundation made outpayments totaling \$882,069 during 1940 while the New York Community Trust paid out \$222,964, the Chicago Community Trust \$191,292, the Permanent Charity Fund, Boston, \$183,535, the California Community Foundation \$162,353, the Cleveland Foundation \$161,049, and the Indianapolis Foundation \$106,016.

New funds received during 1940, including \$5,207,281 in the New York Community Trust, \$546,657 in the Cleveland Foundation, and \$438,959 in the Richmond Foundation, brought the year's additions to community trusts to a record total of \$7,265,202. Initial receipt of principal funds was reported by the LaCrosse Community Trust and the Harrisburg Foundation, while the Peoria Community Trust made its initial outpayment.

A community trust is a composite foundation created for the administration of multiple charitable funds. A trustee bank selected by the donor becomes responsible for the fiscal management of the fund while outpayments are made under supervision of a central Distribution Committee, the majority of whose members are appointed by public sources.

COMORO ISLANDS. See under MADAGASCAR,

COMPENSATION. See WORKMEN'S COMPENSATION. **CONCENTRATION CAMPS.** Consult BOHEMIA AND MORAVIA, FRANCE, GERMANY, NETHERLANDS, NORWAY, POLAND, SPAIN, under *History*.

CONCILIATION SERVICE, U.S. In creating the Department of Labor, Congress gave the Secretary of Labor authority to mediate or conciliate industrial disputes. This function was carried on in the Secretary's office until 1917 when a separate division was established for this purpose. Since 1913, Commissioners of Conciliation appointed by the Secretary have disposed of more than 33,000 situations involving approximately 26 million men and women.

During the fiscal year ended June 30, 1941, the Conciliation Service disposed of 5,599 labor situations directly involving approximately 3,446,157 persons in 48 States, the District of Columbia, Alaska, and Hawaii. Of this total, 3,705 situations were classified as labor disputes which included strikes, lockouts, threatened strikes, and controversies. These involved 2,951,944 persons. The remaining 1,894 situations involving 494,213 persons included arbitrations, the rendering of technical services and information, consent elections, and informal consultations with representatives of employers or employees or of both.

Among the most significant work of the Service was its disposition of threatened strikes and controversies. During all the year, the efforts of its Commissioners of Conciliation prevented from becoming strikes or lockouts more than 90 per cent of the 2,251 definite threatened strikes and controversies which were brought to its attention in advance of stoppage action.

One of the outstanding labor relations developments of the year was the creation of the National Defense Mediation Board by Executive Order of the President. The Board was authorized to act whenever the Secretary of Labor should certify to it that any controversy or dispute affecting national defense could not be adjusted by the Commissioners of Conciliation. From the very first the Service and the Board have worked in closest possible cooperation, devoting especial attention to the desirability of certification of any dispute and to the most effective time for such certification.

As of June 30, 1941, 44 disputes handled by the Service had been certified to the Board. From March, when the Board was created, through June, the Service itself disposed of 1,668 other labor disputes.

Since the very beginning of the defense program, of course, it has been the Service's practice to keep every properly interested agency closely and constantly informed of the status and progress of any employer-employee situation materially affecting the prosecution of that program. In turn, especially valuable assistance was received from the labor divisions of the War and Navy Departments and from the informal advisory efforts of the labor and industry consultants of the Office of Production Management. These agencies, however, are only a few among many of the defense bodies with which the Service has cooperated and from which it has received information and aid in its work for industrial peace.

In all that work, complete priority and uninterrupted attention has been given to every case of a defense nature. Indeed, by a careful marshalling of its resources and with only negligible exceptions, the Service has been able to make the assistance of a Commissioner of Conciliation available to any vital enterprise anywhere in the country within less than twenty-four hours of receipt of a request for

its peace-making aid. See LABOR CONDITIONS under *Governments and Labor Disputes*. Compare topics listed under MEDIATION.

J. R. STEELMAN.

CONGO, Belgian. See BELGIAN CONGO.

CONGO, French. See FRENCH EQUATORIAL AFRICA.

CONGREGATIONAL CHRISTIAN CHURCHES, The General Council of the. A general council was instituted at Seattle, Wash., June 27, 1931, when the National Council of the Congregational Churches in the United States and the General Convention of the Christian Church merged their activities in this new organization. The next biennial meeting of the General Council will be held at Hanover, N.H., June 23 to 30, 1942. For the officers elected for the present biennium, see the YEAR BOOK for 1940.

The headquarters of the General Council of the Christian Churches are at 287 Fourth Avenue, New York City. Those of the Board of Home Missions at the same address, with offices also at 14 Beacon St., Boston, Mass., and those of the American Board of Commissioners for Foreign Missions at 14 Beacon St., Boston, Mass. For statistics, see RELIGIOUS ORGANIZATIONS.

CONGRESS, U.S. See REPRESENTATIVES, U.S. HOUSE OF; SENATE, U.S., UNITED STATES under *Legislation*.

CONGRESS OF INDUSTRIAL ORGANIZATIONS See LABOR CONDITIONS under *Union Movements*; also, BUSINESS REVIEW under *Automobiles*, NATIONAL DEFENSE MEDIATION BOARD, NATIONAL LABOR RELATIONS BOARD.

CONNECTICUT. A New England State. Area: 5,009 sq. mi. including 110 sq. mi. of inland water, but excluding part of Long Island Sound, 573 sq. mi. Population: (1940 census) 1,709,242. The urban population comprises 67.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 1.9 per cent (U.S. average, 10.2); elderly (65 years and over), 7.4 per cent. Connecticut ranks 46th among the States in area, 31st in population, and fourth in density, with an average of 348.9 persons per square mile. The largest city and capital is Hartford with 166,267 inhabitants. There are eight counties and 24 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Alonzo G. Grace, Commissioner of Education, there were 287,598 pupils enrolled in the public schools of Connecticut during the school year 1940-41, 185,923 in elementary schools and 101,675 in secondary schools. Teachers (including teaching principals) numbered 10,005 and received an annual average salary of \$1,798.83. Total expenditures for the year, including capital outlay and interest on bonds and loans, were \$31,336,827. For higher education see *Connecticut* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 2,792, of which 2,719 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 498,463; 416,656 were private and commercial automobiles, 1,172 busses, and 75,839 trucks and tractor trucks. Gross motor-fuel consumption was 380,375,000 gallons. Net motor-fuel tax receipts were \$11,084,000, the rate being three cents per gallon (Dec 31, 1940). State motor-vehicle receipts (from registrations licenses, fines, etc.) were \$7,385,000.

Railways of all classes extended 904 miles (Dec. 31, 1939) .38 per cent of the total mileage in the United States. Class I steam railways accounted for 759 miles. There are 18 airports and landing fields in the State (seven lighted fields) and 13 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 245 civil aircraft in the State and 721 airline transport, commercial, and private pilots (583 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 358,000, as compared with 361,900 acres in 1940. According to the latest census, there are 21,163 farms, valued at \$204,761,000, averaging 71.6 acres each. Farm population numbered 103,913 or 6.1 per cent of the total. Leading crops were tobacco, worth \$8,729,000 and producing 23,502,000 lb., and hay, \$8,048,000, 403,000 tons.

Manufacturing. According to the latest census (covering the year 1939) the total value of manufactured products was \$1,229,585,773. For details, see 1940 YEAR BOOK.

Mineral Production. Minerals are of relatively little importance in the output of Connecticut, their total value in 1939 being only \$4,306,351, according to the U.S. Bureau of Mines; approximately half of this sum was accounted for by stone.

Trade. According to the 1940 census there were 1,607 wholesale establishments in Connecticut, employing 15,795 persons, reporting net sales for 1939 of \$413,134,000 and annual pay roll of \$26,378,000. There were 25,873 retail stores with 70,248 employees, reporting sales of \$717,262,000 and pay roll of \$79,905,000. Service establishments numbered 8,352, employing 12,678 persons for \$13,378,000 per year, and reporting a business volume amounting to \$46,033,000. The leading business center of the State is New Haven which reported wholesale sales of \$117,994,000, retail sales of \$87,311,000, and \$8,385,000 receipts for its service establishments. Hartford reported sales of 115,046,000 wholesale and 108,613 retail. Bridgeport, \$52,842,000 and \$73,628,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Connecticut was \$28,917,000. Under the Social Security program, financed by Federal funds matching State grants, 17,636 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$27.64 (U.S. average pension, \$21.08); an estimated 2,950 dependent children in 1,290 families received an estimated total payment of \$58,100; and 233 blind persons (without Federal aid) received \$29.02 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 8,742 and received \$25.46 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 392 (\$26,000); NYA student work program, 2,776 (\$20,000); NYA out-of-school work program, 3,008 (\$71,000); WPA, 6,921 (\$479,000); other Federal emergency projects, 136 (\$13,000); regular Federal construction projects, 11,339 (\$1,772,000).

Legislation. The General Assembly convenes in regular session on Wednesday after the first Monday of January in odd years. It is composed of 35 Senators (22 Democrats and 13 Republicans in 1941) and 272 Representatives (88 Democrats and 184 Republicans). The following comment on the 1941 session is here published with permission from *The Hartford Courant*, June 8, 1941:

"The 1941 session of the Connecticut General As-

sembly, which ended less than an hour short of the limit imposed by the State Constitution, possibly reveals a transition state in Connecticut government. The bitter antipathy against any sort of Federal coercion, with or without a cash coating, which was a feature of even very recent sessions had no visible influence in the 1941 Legislature.

"Probably the most important law of the 1941 session arises from the Federal Social Security Act, acceptance of which is to all intents and purposes mandatory upon the States. Taking advantage of various adjustments permitted by the Federal law, the 1941 Legislature managed to balance the claims of employees for greater unemployment compensation benefits with the claims of the employers for lightening of the burden of payroll taxes. The result is a new State law which provides high benefits and low taxes as long as the State reserve exceeds a fixed amount, in this case \$40,000,000. If the fund falls below that mark, benefits drop and taxes go up. No other State has evolved such an operating method under the law, but if the Connecticut statute works, and the Federal law continues to give the present leeway, the 1941 Legislature probably can claim to have done important pioneering in social security legislation.

"On the other hand, the recent Legislature showed a greater disposition to assert itself than did its two immediate predecessors. More or less trivial incidents during the session, capped by an open protest against gubernatorial interference with the transmission of the Bridgeport bond bill from one house to the other, led up to thumping defeats in the House for two proposed amendments, one to give the Governor power to nominate judges of the minor courts, and the other to prohibit legislators getting worthwhile patronage, both of which had been aggressively sponsored two years ago by the then Governor Raymond E. Baldwin.

"On its own initiative in this session, the House proposed two new amendments looking to great legislative power. One of these would provide for a session every year, rather than every other year as at present, a condition which would possibly lead to reduction of some of the broad fiscal powers the Governor now has. The other proposal would crimp the executive patronage power to requiring him to submit nominations by the first week in March.

"The Legislature had a top-heavy Democratic Senate and an equally top-heavy Republican House, while the Governor and the State administration were Democratic. The majority in each branch several times seemed to be on the point of shattering, but neither leader ever lost on a vital test, though his margin was on occasion provided by members of the opposition. The politically opposed majorities led to the adoption of separate committee organizations. Despite changes in the rules, evolved in the House and copied by the Senate, designed to speed up leadership, the separate committee organization failed to work as well as the joint committees of the past.

"The session had a record amount of business, much of it highly complicated, and some of it exceedingly controversial in a non-partisan way. High points in the 1941 assembly record follow: It revised unemployment compensation law in what may be model for nation, making benefit and tax rates dependent upon size of reserve fund; changed Common Pleas from county to State court and set up State juvenile court districts; wrote milk control law on assumption State control is needed without any emergency; increased annual appropriation for improvement of dirt roads by \$1,000,000 and provided this additional sum shall be distributed among

towns in proportion to mileage of unimproved roads in each town; gave State Liquor Control Commission much wider discretion in issuing permits; adopted total appropriations in excess of \$120,000,000, new record for the State, and provided any surplus in excess of \$1,000,000 in any year shall be used to retire State debt; took first steps toward amending State Constitution to provide for annual sessions of Legislature and quadrennial elections of State officers."

Finances. Total tax collections in Connecticut for the fiscal year ending in June, 1941, were \$64,130,000 (1940: \$61,944,000). Total sales taxes amounted to \$19,683,000, including motor fuel, \$11,688,000. Taxes on specific businesses ran to \$7,246,000, general and selective property, \$2,040,000, and unemployment compensation, \$21,793,000. The net income taxes were \$5,330,000. Cost payments for the operation of general government totaled \$46,984,000 in 1939, the latest year available. (Revenues for the general government for that year were \$73,279,000.) Cost of operation per capita was \$27.72. Total gross debt outstanding in 1941 was \$33,350,000, compared with \$13,568,000 in 1932.

Officers and Judiciary. The Governor is Robert A. Hurley (Dem.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, Odell Shepard, Secretary of State, Mrs. Chase G. Woodhouse; Attorney General, Francis A. Pallotti; State Treasurer, Frank Anastasio; State Auditors, Lewis W. Phelps and Frank M. Lynch; State Comptroller, John M. Dowe. Chief Justice of the Connecticut Supreme Court of Errors is William M. Maltbie; there are four associate members appointed for eight-year terms. See BIRTH CONTROL.

CONSCIENTIOUS OBJECTORS. See SELECTIVE SERVICE SYSTEM.

CONSCRIPTION. See AUSTRALIA, CANADA, CUBA, EIRE, GREAT BRITAIN, MEXICO, NEW ZEALAND, IRELAND (NORTHERN), PHILIPPINES, SALVADOR, URUGUAY, under *History*; SELECTIVE SERVICE SYSTEM; UNITED STATES.

CONSERVATION WORK. See AGRICULTURE, U.S. DEPARTMENT OF, CIVILIAN CONSERVATION CORPS, FISH AND WILDLIFE SERVICE; MARYLAND under *Legislation*; PLANNING.

CONSTRUCTION INDUSTRY. As a result of national-defense requirements, followed by the sudden demands of actual warfare, the construction industry of the United States expanded rapidly in 1941. In a review by *Engineering News-Record* it is estimated that construction of all classes reached a record-breaking total of 11½ billion dollars, and will probably reach 10 billion dollars in 1942. These figures are for the continental United States only and do not include Alaska, the Panama Canal Zone, or outside bases. Nor do they include new army housing facilities beyond those already planned for an army of two million men. The existing facilities provide for housing and serving 1,600,000 men.

While the estimated expenditures for 1942 are somewhat below those of 1941, the proportion for war construction must be increased, especially in view of provision for a long and hard conflict. In 1941, war construction requirements accounted for 65 per cent of the total, but in 1942 it may account for as much as 80 per cent, with civilian construction reduced proportionately. Of all construction contracts awarded in 1941 those for Federal projects represented 60 per cent, with 20 per cent for State, county, and municipal work, and 20 per cent for private, railway, industrial, and utility work.

A large volume of the Federal work is in defense-plan construction under contracts with industrial firms which handle the work with their own engineers.

In 1940, under the emergency conditions created by the war abroad and the demands for national defense at home, the total expenditures for construction reached a record total of 8½ billion dollars. The 1941 record of 11½ billion dollars included all public and private engineering construction and also residential building. Of this enormous total, 51½ per cent was in engineering construction, as against 50 per cent in 1940. The figures for engineering construction, as given in the annual review by *Engineering News-Record*, are summarized in the accompanying table.

VALUE OF U. S. CONSTRUCTION
[Million Dollars]

	1940	1941
Public Works	\$2,825	\$4,691
Private construction	1,162	1,178
Total	\$3,987	\$5,869
<i>Engineering Construction</i>		
Public buildings, including Federal industrial plants and defense housing	1,196	2,786
Highways and streets	678	583
Industrial buildings	595	496
Commercial buildings	400	486
Earthwork, irrigation and drainage	234	245
Bridges	120	117
Sewerage and sewage treatment plants	91	89
Waterworks and water treatment plants	70	77
Unclassified, including airports, air bases, shipbuilding yards, etc., etc	603	996
Total	\$3,987	\$5,869

An important change in the management of war construction activities under the War Department was effected through a bill signed December 2 by the President, under which the Corps of Engineers of the U.S. Army took over the Construction Division of the Quartermasters' Corps. Until then, the Corps of Engineers had handled all river and harbor work (including flood control work on navigable rivers), while the Quartermasters' Corps handled the construction of barracks, camp buildings and facilities, and other army buildings and works. The new system puts under one organization a definite construction program of 3½ billion dollars, and a force of 600,000 men (including contractors' employees), with an excellent staff of experienced engineer officers.

A further improvement in the handling of war construction work was the decentralization of the contract system of the Corps of Engineers. Formerly, all contracts for more than \$50,000 had to be signed and executed at Washington. But under the new arrangement, contracts up to \$5,000,000 may be awarded directly by the officers at some 60 local or branch offices of the Corps of Engineers.

The labor situation on construction work has been fairly satisfactory, with relatively few strikes and disturbances. This was due in part to an agreement between Federal contracting agencies and the building-trades unions under which the latter were practically permitted to unionize all defense construction. These unions pledged themselves not to stop work in case of disputes and labor negotiations. With higher costs for wages and materials, the cost of construction is expected to be 15 to 20 per cent higher during 1942.

Planning a program of postwar construction on a large and long-term basis is an important problem to be worked out as a means of minimizing the difficulties of the inevitable disturbed transition period between war-time and peace-time activities. With peace established, there will be a rapid

cessation of work in many lines, and a resultant flood of unemployment. The aim is to have in readiness a reservoir of needed construction work to absorb this flood. One definite plan, already under way, is the preparation of a six-year program of construction by Federal, state, county, municipal, and local agencies, as well as private construction.

Of several organizations at work on this problem, two of the most important are the Federal Works Agency and the Public Work Reserve, both acting in cooperation with the National Resources Planning Board. The Agency is concerned with Federal construction projects, while the Reserve deals with non-Federal public works of all kinds. The basic purpose of the Reserve is to secure from various public departments and organizations lists of work that should be done during the next five or six years. In addition, it is to assist local governments and agencies in developing programs and plans for such work and to keep these up to date, so that when the transition period begins there will be little delay in perfecting plans and specifications, and financing arrangements for a great variety of construction works of all kinds and in all parts of the country. See BUILDING; BUSINESS REVIEW. Also, see articles on branches of industry, as BRIDGES, DAMS; WATERWORKS AND WATER PURIFICATION.

E. E. RUSSELL TRATMAN.

CONSUMER GOODS. See BUSINESS REVIEW.

CONSUMERS' COOPERATIVES There were no particularly spectacular developments in the consumers' cooperative movement in 1941, but the year witnessed a remarkable quickening of interest throughout the country. The trend toward modernization of premises and equipment continued at an accelerated pace. One of the most notable developments was the gain in the grocery field and the expansion not only in volume of goods sold but also in number of associations handling grocery items. In view of the uncertainties attending business operations in the field of petroleum products and automobile tires and accessories, the expansion into grocery sales represents a protective and stabilizing factor.

Well-organized publicity, membership drives, and increasing use of radio and other means of acquainting the public with the meaning and possibilities of cooperation indicate that the days when the cooperative movement was content to go its way unheralded are past. A nation-wide drive to "strengthen and develop existing consumer cooperatives and to awaken America to the advantage of consumer cooperatives" was launched, as well as a campaign for a \$50,000 radio program on a national scale.

Detailed statistics are not yet available regarding the volume of sales of cooperatives in 1941. The reports thus far received by the Bureau of Labor Statistics indicate a considerable increase in business over 1940 by the retail associations. (Detailed statistics on the operations of cooperatives will be published in a later issue of the *Monthly Labor Review*. The table on page 149 gives figures for 1940.) The wholesales showed remarkable gains over the 1940 business ranging as high as 40 per cent.

It is probable that the volume of patronage refunds on 1941 business will be decreased considerably from levels of previous years. Alive to the uncertainties in the merchandising field, cooperative leaders have been urging the associations to

exercise the utmost conservatism and soundness of methods, and have been preaching that if cooperatives are going to survive the difficult times ahead, they must be well capitalized. For this reason a much larger proportion of earnings than usual will undoubtedly be voted for additional capital, by the annual meetings of the members. These meetings will also have to consider the many problems that war conditions have already produced and threaten increasingly in 1942.

ESTIMATED NUMBER, MEMBERSHIP, AND BUSINESS OF CONSUMERS' COOPERATIVES, 1940

Type of association	Number of associations	Members	Amount of business
Retail distributive associations	4,650	990,000	\$228,325,000
Stores and buying clubs	3,100	485,000	129,650,000
Petroleum associations	1,500	480,000	92,875,000
Other	50	25,000	5,800,000
Service associations	1,340	682,000	20,635,000
Associations providing rooms, meals, or both	360	40,000	750,000
Medical-care associations	30	15,750	345,000
Funeral associations	40 ^a	32,500	200,000
Housing associations	60	3,750	2,530,000 ^b
Electricity associations	700	575,000 ^d	16,650,000
Other	150	15,000	160,000
Telephone associations	5,000	330,000	5,485,000
Credit unions	9,510 ^a	2,816,653	302,339,864 ^c
Insurance associations	1,800	6,800,000	103,375,000
Cooperative wholesales	37	2,363 ^e	70,178,300

^a Actual figure, not an estimate
^b Gross income
^c Based upon reports of Rural Electrification Administration, with allowance for pre-REA associations
^d Number of patrons
^e 1936; data not sufficient to warrant later computation
^f Loans made during year
^g Affiliated retail associations

Legislative Status and Action. In the legal field both victories and setbacks were experienced in 1941. North Dakota passed an amendment to the cooperative act making the use of "cooperative" or any abbreviation of it a misdemeanor, unless the organization is incorporated under the cooperative law. Several measures inimical to cooperative associations were introduced during 1941 but failed of passage, notably in Minnesota and Massachusetts.

The opposition of organized medicine to group plans controlled by laymen (i.e. by members of cooperatives) was manifested in bills introduced in Massachusetts and Ohio which provided that no plan could operate without the consent of a majority of physicians in the area to be served nor (in Massachusetts) without the specific approval of the State medical association.

The property right of National Cooperatives in the trade-mark, "CO-OP" was upheld in the U.S. District Court in New York City, in a case in which an organization had used the trade-mark in spite of having been denied it by the wholesale. An injunction was issued by the court against the offending organization.

Taking the position that patronage refunds to member associations constitute an illegitimate discount on price, the Bituminous Coal Commission (q.v.) ruled that consumers' cooperative wholesale associations could not be recognized as wholesale coal distributors under the Guffey Act. (Farmers' cooperatives are, however, specifically recognized as dealers, under the act.) Cooperative associations viewed the above decision as serious, because "any government ruling which classifies cooperative savings returns as 'discounts' is a threat to all cooperative business," and because of the probability of general extension of price fixing during the war emergency.

Early in February, 1941, a favorable decision

was obtained by the Community Cooperative Hospital in Elk City, Okla., when the District Court granted a writ of prohibition barring prosecution by the State medical board of a 4-year-old charge of unprofessional conduct brought by the medical board against the head of the hospital. This cooperative, started in 1929, has had a 12-year fight for existence.

In a jury decision rendered Apr. 4, 1941, in the District of Columbia, the American Medical Association and the District Medical Society were found guilty of conspiracy against Group Health Association, a cooperative providing medical care of all kinds for its members. The two doctors' associations were held liable to a fine of not to exceed \$5,000 each. This case was brought by the Federal government under the Sherman Antitrust Act, it represented the culmination of a long struggle between the cooperative and the medical profession for the cooperative's right to exist and to be accorded hospital and other facilities for practice.

Expansion in the Movement. A great many new associations and buying clubs were formed in 1941. Even in districts already well developed cooperatively, such as Minnesota and Wisconsin, a considerable number sprang up. The Eastern Cooperative League reported that during September and October, 1941, alone, requests for aid in starting new groups were in excess of those received since 1936.

The architectural improvements in cooperatives that were noted in 1940 continued with increased momentum during 1941. The trend toward self-service in cooperative stores continued, this often being installed during the modernization process.

One of the most noteworthy instances of expansion in the cooperative movement was that which has been taking place in the southeastern States. Although farmers' marketing and the purchasing of farm supplies are quite well developed in this region, formerly it was almost a desert as regards consumers' cooperation. With the formation of the Southeastern Cooperative Education Association in 1940, by a group of persons interested in developing cooperatives, interest has steadily grown. Several regional conferences have been held at which representatives were present from existing cooperatives as well as from localities with no cooperative activities. A substantial proportion of the cooperative associations are those of Negro farmers and city dwellers. Out of these conferences grew a new federation—the Southeastern Cooperative League—with headquarters at Carrollton, Ga. Although the credit unions represent the fastest-growing phase in this region, cooperative stores of urban and small-town cooperators are becoming so numerous that joint purchasing of cooperative label goods is being considered.

From Georgia was reported also a completely cooperative community in which the land and buildings are owned by the cooperative association. (*Southeastern Cooperator* [Carrollton, Ga.], November, 1941.) The tasks of life are divided on a community basis. Thus, one family produces the milk for the community, another the vegetables, a third the poultry, etc. In Colorado the Farmers Union of that State launched a program for the wholesale supply of commodities for local associations. Land was purchased and a building is being erected which will house the general offices, a wholesale warehouse, and the already existing insurance service. In the Lake Superior region a new organization, The Cooperative Terminal, was formed which is not only marketing farm produce but is purchasing meat and fruit for the local retail

cooperatives in the district. A county-wide federation to embrace all types of cooperatives was formed for Kandiyohi County, Minn. There are 30 or more cooperatives of various types in the county.

In the Middle West more and more farm-supply associations as well as those handling petroleum products are branching out into the grocery field. Interesting excursions into new lines were reported from Iowa where some of the best customers of a local petroleum association are the gasoline-motored passenger trains of one of the Class I railroads; and from Idaho where a local gasoline cooperative furnishes water for the village from its own supply.

At least three new cooperative funeral associations were formed in 1941—two in Iowa and one in Wisconsin—and a Minnesota store association voted to establish a mortuary department. There was evidence of steady interest of college students in cooperatives providing rooms, meals, books and students' supplies, and other services. Reports to the Bureau of Labor Statistics indicated that a considerable number of new associations were formed during the year and facilities of existing associations were expanded.

Cooperative Education and Recreation. Consumers' cooperation is more and more being recognized as a subject for inclusion in the curriculum of institutions of learning in the United States. In 1941, Maryland University started a 4-year course in consumers' cooperation, and Antioch College installed a course designed for students wishing to go into the cooperative movement for a livelihood. The cooperative movement each year extends and intensifies its work in the training of students to be managers and employees of cooperatives. In addition to Rochdale Institute, national training school for cooperative employees, almost all of the wholesales hold annual training courses. In 1941 the Good Will Fund, Inc. became joint sponsor with several regional cooperatives of the Midwest Cooperative Managers' Institute, which was held in Chicago in January, 1942.

Central States Cooperatives in 1941 hired a full-time field worker in education and trade practices. In Nebraska where the educational work among the Farmers' Union cooperatives is carried on by the State Farmers' Union, the 1941 convention adopted a resolution recommending that all direct or affiliated activities of the organization be asked to contribute 1 per cent or more of their net earnings each year for education. The Ohio Farmers' Union at its 1941 convention went on record as favoring a State wide program of education in cooperation. It was the consensus of the meeting, also, that every local should "devote time to sponsoring cooperative recreation."

Recreation forms a definite and growing part of the program of the cooperative movement. For the past 6 years a national recreation school has been held for the training of leaders in recreation. In Michigan and Illinois, summer camps are run which combine recreation with instruction. The Illinois camp is leased from the government but that in Michigan is being purchased and will be owned by the cooperative movement there. The cooperative associations in Minnesota and Wisconsin own several parks which offer facilities for camping, boating, etc., and for summer educational institutes. The California associations run an all-year camp. "Play Co-ops" are springing up in various sections of the country. These organizations not only undertake to purchase tickets to theaters, concerts, and other entertainments for their members, but also sponsor group singing, dancing, and

other get-togethers. One local association has formed a drama group which has produced and acted in several plays. Play Co-ops are known to have been started in 1941 in the District of Columbia, New Jersey, and Wisconsin.

Combining recreation and education, a tour of cooperatives was arranged in July, 1941, which included visits to cooperative organizations in Illinois, Indiana, Minnesota, Missouri, Ohio, and Wisconsin. The persons participating were given a chance for first-hand examination of some 24 different types of cooperatives.

Cooperatives and Labor. Several joint labor-cooperative meetings were held during the year. Among these was a meeting—the first of its kind in that section—held in North Kansas City, Mo., at which were gathered delegates from labor unions and cooperative associations in the area. Representatives of labor, cooperatives, and various religious and educational organizations met in April in Louisiana. In Racine, Wis., a Joint Consumers' Council was organized in which organized labor, farm organizations, and cooperatives were represented.

A group of five union-operated cooperative cafeterias are reported to have been undertaken in Massachusetts, these having been taken over after the employing company had decided to close them.

Numerous agreements with organized labor were reported during the year, practically all of which contained increased pay, shorter hours, or both. One such agreement (that signed by Midland Cooperative Wholesale with the office employees union) provided for a sliding scale of rates moving up or down in accordance with the quarterly cost-of-living indexes of the U.S. Bureau of Labor Statistics.

The 1941 convention of the American Federation of Labor adopted a report of the resolutions committee directing the Executive Council to "give consideration to the subject of consumers' cooperative activities and to productive and consumers' cooperative organization." The 1941 convention of the Congress of Industrial Organizations passed a unanimous resolution calling upon the officers to "undertake a careful analysis of ways and means whereby the C.I.O. and its affiliated organizations may participate in the development of the consumers' cooperative movement and stimulate the interests and activities of union members along such lines." Unanimous endorsement to the consumers' cooperative movement was also given by the Textile Workers Union. Twenty railroad labor organizations expressed interest in cooperative buying organizations.

See the consumer organizations listed under SOCIETIES.

FLORENCE E. PARKER.

CONTAINER INDUSTRY. See GLASS; TIN.
CONTRACT DISTRIBUTION DIVISION. See PRODUCTION MANAGEMENT, OFFICE OF.

CONVOYS. See NAVAL PROGRESS, UNITED STATES under *Foreign Affairs*.

COOPERATION. See AGRICULTURAL COOPERATION; CONSUMERS' COOPERATIVES; SOCIETIES.

COORDINATOR OF COMMERCIAL AND CULTURAL RELATIONS. See COORDINATOR OF INTER-AMERICAN AFFAIRS.

COORDINATOR OF INTER-AMERICAN AFFAIRS, Office of the. This office, established by executive order of President Roosevelt on Aug. 18, 1940, as the Office of the Coordinator of Commercial and Cultural Relations between the American Republics, received its present title by a further executive order of July 30, 1941. Its aims and functions from the start have been to formulate and execute programs

that would strengthen the economic and cultural bonds between the republics of the Western Hemisphere for their mutual benefit, and in so doing to strengthen the defense of the Americas.

The Office was organized to coordinate the activities of public and private agencies in the field of inter-American affairs. However, projects are administered by the Office itself where no agency already exists to handle them. Broadly speaking the work is of a two-fold nature. One is the group of problems that deal with the emergency situation confronting the New World in wartime. The other is a long range program of permanent development and understanding. In each there are two important fields of operation, the economic and the psychological.

Economic. One of the chief inter-American problems facing the 21 republics when the Office was established was the effect of the European war on Central and South American trade. The Coordinator's cooperation with government buying agencies, the Export-Import Bank, executive departments, etc., helped double United States purchases from the other republics. Various other governmental and international bodies have been active in solving economic problems. Among them are, the Inter-American Shipping Committee, of which the Coordinator is a member, the Inter-American Development Commission, of which the Coordinator is chairman and which set up country commissions in each of the 20 other republics, and the Board of Economic Warfare (q.v.), of which the Coordinator is a member. In November, 1941, the Commercial and Financial Division merged certain of its functions with the Board of Economic Warfare with the Assistant Coordinator at the head of the Board's American Hemisphere Division. Thus when Japan attacked the United States on December 7, the broad hemisphere program was smoothly integrated into the economic strategy of war.

Other important activities in the economic field were. The original studies on representation of United States firms in the other republics, which led to proclamation of the so-called blacklist; a study of hemisphere air line ownership, which led to the establishment of a unit in the Defense Supplies Corporation (q.v.) with lending power up to some \$8,000,000, preparation of an Institute of Tropical Agriculture, which will begin to function in 1942, market studies and surveys of the other republics; a vocational training program to help supply these countries with technicians, and the loan of mining and agricultural experts to help develop existing resources. These activities are typical of the many undertaken by the Office, either by placing its organization at the disposal of other agencies, or by executing projects itself.

Psychological. With the outbreak of war, the work in the cultural and communications fields was reoriented from that of "defense" to that of "warfare." In practice this reorientation involved little but intensification and expansion in all fields of activity.

A large part of the Office's program has been devoted to improving the facilities by which the 21 republics learn about each other. News and feature agencies already serving the Latin American press have been helped to improve their channels of information; pictures, articles, and news were supplied in an increasing stream, which was greatly augmented after the United States entered the war. A regular inter-American flow of daily news is supplied to press services and short wave broadcasting stations. Among other activities, the Office distributes 200,000 copies a month of an illustrated

magazine in Spanish and Portuguese devoted to hemisphere defense, and a bi-weekly American Newsletter to thousands of leaders in inter-American affairs.

In the motion picture field, the Office has encouraged the production of pictures of all kinds in the Americas, working with the commercial companies in both feature and news reel fields. The industry has cooperated thoroughly with the Office, submitting scripts and ideas for approval. The Motion Picture Society of the Americas was created. Twenty-five nontheatrical films have been shipped to United States missions in the other republics for general distribution.

The Office also has sought to encourage specially planned radio programs originating in the United States for broadcast to the other American republics, and special programs with a Latin American background for broadcast in this country. Special transcriptions for local stations in the other republics have been a feature.

The Office is cooperating with the other republics in public health, child welfare, social legislation, and related subjects. Public health specialists have been sent to some of the countries, while physicians, social workers, and labor leaders among others have been brought to the United States for study.

In the field of education, the Office has stimulated study of inter-American subjects by a broad program of student exchanges, by preparing teaching aids such as books, pamphlets, motion pictures, etc., and by cooperating with schools and colleges in setting up new courses. There have been interchanges of scientists, engineers, writers, artists, and administrators.

NELSON A. ROCKEFELLER.

COPPER. The armament requirements of the United States and of the nations entitled to aid under the Lend-Lease Act caused an unprecedented demand for copper in 1941 and by the end of the year it was the tightest of all base metals. It had become almost semi-precious. The total production of domestic refined copper was 1,061,000 tons, compared with 1,033,710 tons in 1940. This is the highest production figure reached since the two peak years, 1916 and 1929. But increase in smelter production from domestic sources was only 8 per cent. Imports by commercial organizations and by the government brought the supply up to about 1,661,000 tons. The Metals Reserve Co. holds the government-imported metal as stockpile copper. Mine output of recoverable copper in 1941 was 959,506 tons, a 93 per cent increase over 1940. Defense needs in 1941 reached 600,000 tons. The demand from all sources was for 1,750,000 tons for the year. An official mandatory price of 12¢ a lb. was established in August, 1941; but in November the government decided to pay 17¢ for marginal mine copper that could not be produced at 12¢. In October the OPM restricted the use of copper to the defense industries. The new bill passed by Congress, January, 1942, changing the content of the United States nickel from ¼ nickel, ¾ copper to ½ silver, ½ copper, was designed to save 434 tons of copper per year for vital war purposes.

The United States consumes almost the entire copper output of the Western Hemisphere; and the Allies combined take nine-tenths of the world's production. Yet more is needed. Already the 1942 demands in the United States are estimated at 1,850,000 tons (900,000 tons for brass shell cases; 100,000 tons for special Navy purposes; 150,000 tons for degaussing ships, i.e. making them in-

vulnerable to magnetic mines; 200,000 tons of refined copper for Great Britain; 500,000 tons for electrical requirements; and some 200,000 tons for essential civilian uses). The supply for 1942 (with 1942 requirements estimated at 1,750,000 tons: 1,100,000 tons of domestic, 650,000 tons of imported copper) falls short of even the immediate military demands.

The United States looks to South America, especially to Chile and Peru, to fill this deficit and also to Mexico, Canada, and Australia. The Metals Reserve Company expects to add at least 200,000 tons from these countries to the 350,000 tons acquired in 1941. The OPM granted priorities on machinery and supplies to certain South American countries to help hasten their production of crude and refined copper. No import and export figures after September, 1941, are to be published. The new Phelps Dodge Morenci mine is expected to swell domestic production by 75,000 tons in 1942; Anaconda and Kennecott promise another 40,000 tons, and increases are expected from hundreds of other small far-western mines.

A new campaign for the development of metals put on foot by the British Empire early in 1942 was expected to increase the production of copper in the Belgian Congo and Rhodesia by 100,000 tons a year.

See BUSINESS REVIEW under *Copper*; NATIONAL BUREAU OF STANDARDS, SUPPLY PRIORITIES AND ALLOCATIONS BOARD.

COSTS. See EGYPT; ITALIAN EAST AFRICA.

CORN. Corn production in the United States in 1941 was estimated by the U.S. Department of Agriculture at 2,672,541,000 bushels, the highest in nine years, and compared with the 1940 crop of 2,460,624,000 bushels and the 1930-39 average of 2,307,452,000 bushels. The acreage harvested for all purposes totaled 86,089,000 acres compared with 86,738,000 acres in 1940, 13 per cent below the 10-year average of 98,049,000 acres, and, as in 1940, was the smallest acreage since 1894. The average yield per harvested acre, 31 bushels versus 28.4 bushels in 1940, was exceeded in the 75 years of record only by the 1906 acre yield of 31.7 bushels and compared with the 10-year average of 23.5 bushels. Factors favoring the excellent crop were favorable early weather, increased acreages of high-yielding, drought-enduring hybrids, clean fields made possible by increased use of mechanized equipment, and ample moisture, and warm weather during early fall. The corn harvested for grain was estimated at 2,429,054,000 bushels, the 4,083,000 acres harvested for silage produced 34,026,000 tons of silage, and the remainder of the crop about 3,975,000 acres, was harvested for forage or grazed by livestock. States leading in production of corn for grain were Iowa 442,527,000 bushels, Illinois 387,292,000, Indiana 170,829,000, Minnesota 158,240,000, Nebraska 152,831,000, Ohio 152,559,000, and Missouri 110,418,000 bushels. Wisconsin, Minnesota, New York, Pennsylvania, Michigan, and Iowa in order led in silage production. The season average price per bushel (preliminary) received by farmers averaged 70.9¢ in 1941 and the value of production was estimated at \$1,894,841,000 versus 61.8¢ and \$1,520,723,000 in 1940. See *Crop Production Table* under AGRICULTURE. See ENTOMOLOGY, ECONOMIC.

CORPORATIVE STATE. See FRANCE, ITALY, PORTUGAL, RUMANIA, and SLOVAKIA under *Government and History*; FASCISM.

CORRESPONDENTS, Foreign. See NEWSPAPERS AND MAGAZINES.

COSMETICS. See FASHION EVENTS; FOOD AND DRUG ADMINISTRATION.

COSMIC RAYS. See PHYSICS.

COSTA RICA. A Central American republic. Capital, San José.

Area and Population. Area, 23,000 square miles; estimated population, 639,197 on Jan. 1, 1940. The people are largely of Spanish and other European descent, except for some 18,000 Negroes in the Atlantic banana zone and about 3,000 aboriginal Indians. Estimated populations of the chief towns as of Jan. 1, 1940: San José, 74,322; Cartago, 21,334; Limón, 17,065; Alajuela, 12,272; Heredia, 10,211; Puntarenas, 8,741.

Defense. As of Jan. 1, 1941, Costa Rica had an active army of 548 men (220 musicians) and trained reserves of 200. A decree of July 6, 1940, established the National Police Corps, with both police and military duties. By an agreement signed July 14, 1941, Costa Rica engaged a United States military mission to help train its armed forces. A supply of modern arms also was obtained from the United States. The Government maintained one customs patrol launch on the Pacific coast and another in the Caribbean.

Education and Religion. The illiteracy rate is among the lowest in Latin America. Physical education was made compulsory in schools Sept. 19, 1940. At the beginning of 1940 there were 659 elementary schools with 66,876 pupils, 2 secondary schools with 1,234 pupils, 1 normal school with 450 students, and 2 colleges (at Cartago and Alajuela). The University of Costa Rica, founded in 1844 at San José, was reopened Mar. 7, 1941, after having been closed for a number of years. Roman Catholicism is the state religion, but other creeds enjoy complete liberty of worship.

Production. Agriculture is the chief occupation. Coffee, bananas, and cacao comprised 86.8 per cent of total export values in 1940. Coffee exports in 1940 were 288,566 bags (of 132 lb.), bananas, 3,259,415 stems; cacao, 4,903 metric tons. Corn, beans, rice, tobacco, sugar, potatoes, fruits, and vegetables are grown for domestic consumption. The 1940 cattle census showed 331,142 head. The forests yield some cedar, balsa wood, and hardwoods. Gold, silver, and salt are the only minerals extracted. Manufacturing is confined to cigars, cigarettes, furniture, candles, cheese and a few other products.

Foreign Trade. Imports in 1940 were equivalent to 16,840,463 U.S. dollars (\$16,884,962 in 1939); exports, \$7,483,957 (\$9,086,498 in 1939). The imports surpluses were accounted for by large investments of foreign capital and other invisible items. Coffee exports in 1940 amounted to \$3,989,305; bananas, \$1,904,813; cacao, \$604,991; gold in bars, \$473,797. The United States took 58.8 per cent of the 1940 exports (45.6 in 1939); United Kingdom, 25.1 (16.9); Germany, 0.0 (25.1). Of the 1940 imports, the United States furnished 75 per cent (58.8 in 1939); Germany, 3.5 (17.7); United Kingdom, 4.5 (3.9).

Finance. Actual governmental revenues in 1940 were 41,703,000 colones; expenditures, 43,992,000. The expenditure estimate for 1941 was 35,583,000 colones. On Dec. 31, 1940, the external debt was 99,966,943 colones (100,169,428 on Dec. 31, 1939); internal debt, 35,374,629 colones (32,919,052 in 1939). Average exchange rate of the colon in 1940: Controlled, \$0.1779 (\$0.1779 in 1939); uncontrolled, \$0.1754 (\$0.1764 in 1939).

Transportation. In 1941 Costa Rica had 413 miles of railway line, 448 miles of improved highways, and a domestic air network connecting with the Pan American Airways system. The chief ports are Limón on the Caribbean and Puntarenas on the Pacific.

Government. Executive power is vested in a president elected by direct vote for four years and legislative power in a Congress of 44 members, half of whom are elected (for four years) every two years. President in 1941, Dr. Rafael Angel Calderón Guardia, who assumed office May 8, 1940.

History. Negotiations for a settlement of the long-standing boundary controversy between Panama and Costa Rica were resumed in February, 1941. After a friendly meeting between the Presidents of the two republics at Sixaola River in the disputed area late in April, a boundary treaty was signed in San José May 1 and ratified soon afterwards by the Congresses of both countries. The treaty legalized the de facto boundary except for an interior district adjoining the Yorkin River where the two countries exchanged districts of approximately equal size. It set up a mixed commission of two representatives from each country, with a Chilean technical adviser, to survey and mark the frontier. It also granted both governments perpetual and identical rights of unlimited free navigation on parts of the Sixaola and Yorkin Rivers.

Following the example of Chile (q.v.), the Government on March 31 ordered the seizure of a German and an Italian freighter interned in Puntarenas harbor. The ships' crews and officers were imprisoned and then deported for setting fire to and badly damaging the ships. In May the head of German Nazi organizations in Costa Rica and an accomplice were deported for anti-democratic propaganda. In June Nazi employees of the Pacific Railroad were dismissed and an armed patrol of the railway established to prevent sabotage. The Government on October 16 closed German consular agencies in Costa Rica after the Reich Government, over its protest, had ousted Costa Rican consulates in German-occupied countries of Europe. A week later the authorities at San José announced that they would expel foreigners writing or campaigning against the democracies.

This policy received wide popular support. All Costa Rican organizations opposing the Axis and its adherents united in the National Anti-Nazi Front. The Front sponsored a huge pro-democratic demonstration in San José on September 15, the 120th anniversary of independence from Spain, with President Calderón Guardia as the chief speaker. Catholics participated with the written approval of the Archbishop of Costa Rica although the secretary of the Communist party was among the scheduled speakers.

In line with national sentiment, the Government strongly supported Washington's foreign policies. On July 3 it declared its non-belligerency in place of neutrality in the war, following the example of the United States. On September 5 it supported Uruguay's proposal to permit any American country involved in the war to use its ports and airfields. A United States military mission was engaged (see above under *Defense*).

Following the Japanese attack upon the United States, the Costa Rican Government immediately (December 7) declared war upon Japan. A war resolution was passed unanimously by Congress December 8. Arrest of all Japanese in the republic was ordered. Costa Rica again was the first Latin American country to declare war on Germany and Italy (December 11) after those countries declared

themselves at war with the United States. On December 15 it recalled its Minister to Madrid and Vichy.

Costa Rica during 1941 obtained further financial aid from the Export-Import Bank of Washington. A \$500,000 credit for currency stabilization purposes was obtained August 1. On August 7 it was announced that a new loan contract had been signed superseding that of Sept. 23, 1940, under which \$4,600,000 was advanced for construction of the Costa Rican section of the Inter-American Highway. The United States undertook to meet all except \$2,500,000 of the cost of the highway. The new loan, totaling \$4,600,000, provided \$2,500,000 for the construction of other roads and public works. Costa Rica also benefited from the U. S. defense program through the employment of hundreds of Costa Rican artisans and laborers in the construction of the third set of locks for the Panama Canal.

Under President Calderón Guardia, Costa Rica abandoned some of the nationalistic economic legislation adopted by the preceding administration. The state monopoly on the importation and distribution of gasoline was abolished June 2. The project for nationalization of the Electric Bond and Share's power system in San José and neighboring towns was dropped when Congress approved, 40 to 3, a new 25-year contract between the Government and the company. A break in the friendly relations between President Calderón Guardia and ex-President Leon Cortés Castro over political issues was reported on April 30. Later Dr. Calderón Guardia discharged several members of the national police who publicly expressed support of Cortés Castro. He announced that he would resign the Presidency if his party (National Republican) did not receive a vote of confidence in the 1942 Congressional elections.

See LEND-LEASE ADMINISTRATION; PAN AMERICANISM.

COST OF LIVING. See LIVING COSTS AND STANDARDS.

COTTON. The cotton crop of the United States for 1941, as estimated by the U. S. Department of Agriculture on Dec. 8, 1941, amounted to 10,976,000 bales of 500 lb., as compared with 12,566,000 bales in 1940, 13,246,000 bales, the 1930-39 average, and the record crop of 18,946,000 bales in 1937. Lint yield averaged 235.4 lb. per acre compared with 252.5 lb. in 1940, the record of 266.9 lb. in 1937, and 205.4 lb., the 1930-39 average. Of the 23,250,000 acres in cultivation July 1, 1941, 3.8 per cent were abandoned later, leaving 22,376,000 acres for harvest, compared with 23,861,000 acres in 1940.

World carry-over of American cotton on Aug. 1, 1941, as indicated by reports of the New York Cotton Exchange Service and official agencies, was about 12,847,000 bales compared with 14,554,000 at the end of the previous season and 14,137,000 two years before. The carry-over of American cotton in the United States, estimated at 12,010,519 running bales, together with the above estimate of world total, indicated the carry-over of American cotton in foreign countries on Aug. 1, 1941, at about 836,500 bales. Other cottons carried over in the United States included 15,695 bales of American Egyptian, 4,916 bales of sea-island, and 139,622 bales of foreign growths. The 1941-42 season was the fifth consecutive year that the domestic supply of American cotton had been above 22 million bales. Domestic disappearance of American cotton in the 1941-42 season, however, was expected to be con-

siderably above production, thus providing for a reduction in the carry-over at the beginning of the next season. During the past 12 years, domestic carry-over of American cotton averaged 8,300,000 bales, of which an average of 4,500,000 bales were Government held and 3,800,000 "free" cotton. On Aug. 1, 1941, the "free" carry-over totaled over 5,500,000 bales versus 1,700,000 bales a year earlier. Domestic consumption of American cotton totaled 9,700,000 bales last season to surpass the previous record by 1,800,000 bales. With exports at the lowest level since the Civil War, however, domestic disappearance totaled only 10,700,000 bales. World mill consumption of American cotton during the season ended July 31, 1941, was estimated at 11,919,000 bales compared with 12,876,000 bales in 1939-40.

The world supply (carry-over plus production) of all cotton for the 1941-42 season was estimated in December to total about 47,900,000 bales, the total world supply approaching 50 million bales for the fifth consecutive season. World carry-over of all cotton on August 1 was about 21,961,000 bales, as against 20,326,000 bales in 1940-41. The world supply of American cotton prospective for the current season, 1941-42, was indicated at about 23,397,000 bales compared with 24,858,000 bales in 1940-41 and the record supply, 26,224,000 bales in 1932-33. The world carry-over and supply of American cotton had increased materially since 1920 and the total supply, formerly about one-third larger than consumption, currently had been about double consumption. This was indicative of the extent to which consumption had been running below production despite a downward trend in production. Consumption in the 1941-42 season was expected to exceed production, and the world carry-over on Aug. 1, 1942 probably would be smaller than a year earlier. In the last four years the carry-over constituted 50 per cent or more of the supply and 50 to 78 per cent of the carry-over consisted of Government loan stocks.

Cotton production in 1941 in the countries reported was estimated to be, for the United States, 10,976,000; India, 5,021,000; U.S.S.R. (Russia), 4,300,000; China, 2,406,000; Egypt, 1,671,000; Brazil, 2,199,000; Peru, 339,000; Mexico, 333,000; Belgian Congo, 214,000; Iran, 208,000; Haiti, 13,000; Spain, 9,200; Ecuador, 9,200, and Rumania, 21,000 bales. The total world production in 1941-42 was tentatively indicated late in 1940 at 26,500,000 bales compared with 28,615,000 in 1940-41. In 1940-41, Argentina produced 232,000 bales, Brazil, 2,522,000 bales, Uganda, 290,000 bales; Nigeria, 55,000 bales; Anglo-Egyptian Sudan, 245,000 bales; Burma, 92,000, Chosen, 195,000; and Australia, 15,000 bales. The estimated production of Iraq in 1940-41 was 21,000 bales.

The cotton crop of the United States for 1940, as reported by the U.S. Bureau of the Census, the estimated crop for 1941, and the cotton reported ginned to Dec. 13, 1941, are shown in the accompanying table:

The table includes for 1941, under the ginning report, 863 round bales counted as half bales and also 42,104 bales of American-Egyptian cotton, and 2,702 bales of sea-island cotton, grown largely in Georgia and Florida. The 1941 crop was estimated to include 62,000 bales of American-Egyptian cotton grown on 135,900 acres, principally in Arizona. The cotton of the 1941 crop ginned up to Dec. 13, 1941, averaged substantially lower in grade and slightly longer in staple than that ginned up to Dec. 13, 1940, according to reports based on the 9,870,311 bales of American upland cotton ginned to that

date. About 80.9 per cent of the cotton ginned in 1941 was tenderable on future contracts compared to 86.2 in 1940.

UNITED STATES COTTON CROP 1940-41

States	Crop in 1940 500-lb bales	Estimated crop, 1941, 500-lb bales	Bales ¹ ginned before Dec 13, 1941
United States	12,564,988	10,976,000	9,915,117
Alabama	775,459	790,000	772,383
Arizona	195,955	203,000	119,565
Arkansas	1,510,238	1,445,000	1,367,592
California	543,497	446,000	282,094
Florida	17,502	17,000	14,219
Georgia	1,015,453	624,000	631,853
Louisiana	456,886	315,000	309,836
Mississippi	1,250,412	1,420,000	1,383,515
Missouri	384,590	490,000	466,906
New Mexico	117,830	115,000	72,528
North Carolina	743,691	556,000	563,160
Oklahoma	789,317	750,000	616,077
South Carolina	908,354	405,000	402,717
Tennessee	507,277	600,000	569,897
Texas	3,252,556	2,745,000	2,317,413
Virginia	21,302	28,000	22,890
All Others	14,669	27,000	22,472

Running bales

Oil mills in the United States, during the cotton year ended July 31, 1941, crushed 4,396,191 tons of cottonseed. The products of the seed included 1,207,309 bales of linters, 1,107,688 tons of hulls, 1,952,911 tons of cake and meal, and 1,424,899,485 lb. of oil.

Consumption of all cottons in the United States rose in 1940-41 to 9,721,700 bales from 7,783,774 bales in 1939-40, and that used by American mills was consumed largely, more than 85 per cent, in the cotton growing states. Consumption of cotton in the United States had fluctuated between five and eight million bales per season since 1913-14. In the 1941-42 season, based on the rate of consumption during and since August, 1941, domestic consumption was expected to approximate from 10.5 to 11 million bales. Foremost among factors contributing to the exceptionally high level of domestic cotton consumption were those traceable to the national defense efforts. The annual consumption of cotton in the United States increased from less than 14 lb per capita in 1876 to 31.8 lb. in 1916, a record which stood until 1940 when it attained 35.8. A further increase was in prospect for 1941. Wool consumption ranged from 1.8 lb to 4.2 lb. per capita since 1876. Consumption of silk increased from a negligible quantity in the earlier part of the period to a high of 0.8 lb in 1929, since when it declined to 0.36 lb. in 1941. The recent decline reflected the sharp increase in rayon consumption. Since 1927, per capita consumption of rayon exceeded that of silk, and since 1938 that of wool, reaching 3.7 lb. in 1940.

Estimates of world consumption of cotton (exclusive of linters in the United States) for the year ended July 31, 1941, were equivalent to about 26,788,000 bales, compared with 28,461,000 in 1939-40. Of the total consumption in 1940-41, about 14,869,000 bales were foreign and 11,919,000 American. The consumption of American cotton in countries other than the United States fell in 1940-41 to 2,348,000 bales, while non-American cotton in countries other than the United States decreased to 14,869,000 bales. Total cotton consumption in foreign countries made a net gain for the period 1920-40 of 39 per cent, and throughout the period there was a marked tendency for any change in the consumption of either American or foreign cotton to be associated with a reverse movement in the other. For the period as a whole, consumption of foreign cotton outside of the United States showed a net increase of 121 per cent, whereas con-

sumption of American cotton declined 58 per cent. In 1940-41, consumption of American cotton was only 16 per cent as large as consumption of foreign growths, whereas from 1920 to 1934 it averaged about three-fourths as large. Foreign consumption of both American and other cottons would be exceptionally small during the current (1941-42) season.

Prices of middling $1\frac{1}{8}$ inch cotton at the 10 spot markets averaged 11 cents per lb. during the year ended July 31, 1941, compared with 10.09 in 1939-40, 9 in 1938-39, 9.09 in 1937-38, 13.25 in 1936-37, and 9.79 cents, the 1937-41 average. Prices averaged in January, 1941, 10.10 cents, February, 10.13, March, 10.58, April, 11.09, May, 12.44, June, 13.79, July, 15.58, August, 16.14, September, 17.10, October, 16.49, November, 16.38, and closed on December 31 at an average of 17.77 in the southern spot markets and at 18.55 cents in New York. Since August, 1939, spot prices in domestic markets have been based on middling $1\frac{1}{8}$ inch cotton. Prices received by producers at local farm markets on Dec. 15, 1941, were estimated to average 16.23 cents per lb. for lint and \$44.65 per ton for cottonseed compared with 9.33 cents and \$24.08, respectively, on Dec. 15, 1940. The value of production of cotton lint (marketing season) was estimated (preliminary) at \$893,159,000 in 1941 and of cottonseed \$235,002,000 compared with \$621,380,000 and \$121,578,000 reported in 1940. Returns from lint and cottonseed per acre of cotton harvested averaged above prewar in 4 of the past 7 and in 10 of the past 17 years. Since 1923 the purchasing power of returns per acre, excluding Government payments, were below prewar, even though cotton yields had increased materially. Inclusion of Government payments raised the average purchasing power index numbers for the eight years 1933-40 from 78 per cent of prewar to 96 per cent. In each of the past three years returns per acre, including Government payments, were above prewar. See AGRICULTURAL COOPERATION; BUSINESS REVIEW under the *Defense Program*; TARIFF COMMISSION, U.S.; TEXTILES.

COTTONSEED. See CHEMISTRY, INDUSTRIAL under *Fats and Oils and Plastics*; COTTON.

COUNCIL MANAGER PLAN. See MUNICIPAL GOVERNMENT.

COURT GAMES. *Court Tennis.* Alastair Bradley Martin, almost a newcomer to the ancient game, won the national court tennis laurels and also won at Tuxedo, where he beat Grant in the final. Jimmy Van Alen, who had alternated with Ogden Phipps on the throne for many years, did not defend his title in 1941. Ogden Phipps and Robert Grant, 3d, won the national doubles. The outbreak of war in December cancelled the annual Payne Whitney Memorial intercity matches at Manhasset, one of the top features of the other seasons.

Racquets. Robert Grant, 3d, of New York, shorn of his racquets title in 1940 when he suffered an ankle hurt, returned to the top in 1941, beating J. Richard Leonard of Tuxedo in the national final and winning back the Clarence C. Pell Cup in the open tournament in which he whipped Norbert Setzler, professional, in the last match. He also won the national doubles with C. C. Pell, Jr., and carried off the Tuxedo Gold Racquet. David S. Milford of England was the world's open champion.

Squash Racquets. Charles Brinton, a Princeton undergraduate, shot to the top in squash racquets in 1941, the Philadelphian surprising as he took

national honors as well as the intercollegiate prize. In taking the national title, defended by Willing Patterson, Brinton conquered Hunter Lott, another Philadelphian, in the final, after eliminating H. Sherman Howes and Neil Sullivan. Brinton tried with Stanley Pearson, runner-up in the college finals, also from Princeton, to take the national doubles, but was beaten off by Lott and William E. Slack in the semi-finals. Lott and Slack scored for the fourth straight year by defeating Sam Cochran and H. W. Putnam in the final. The Boston team won the Lockett Trophy. Stanley Galwin annexed the New York State title for the third year in a row. Joe Janotta of Chicago took national veteran's honors, and Miss Cecile Bowes won the national women's championship by turning back Mrs. Enos Thropp, Jr. in the final match. Lester Cummings returned as professional champion, beating Al Ramsay, defender, in their match at Pittsburgh.

Squash Tennis. Harry Wolf, champion eleven years in succession, retired from active competition after winning a couple of early tournaments, and the national squash tennis championship went to Joseph Lordi, a Notre Dame graduate, who defeated Frank Iannicelli, brother of the world's open champion, Thomas Iannicelli, in the final.

COURTS. See LAW. For juvenile courts, see JUVENILE DELINQUENCY. For decisions, see the subject.

CREDIT UNIONS. See CONSUMERS' COOPERATIVES.

CRETE (KRETE). An insular geographical division of Greece, of which it is the most southerly part. The island is 160 miles in length and from 6 to 35 miles wide. Area, 3,235 square miles. There are many mountain ranges which make it a rugged and wild country. Many good harbors exist along the northern shore, the best being at Suda Bay, but the southern shore is mainly inaccessible though shelter exists at Massera Bay. Crete comprises four departments—Canea, Herakleion, Lasithion, and Rethymnon. Population (Dec 31, 1938), 386,427. Chief towns: Canea (Khania), the capital, 26,604 inhabitants, Candia, 33,404; Rethymnon, 8,632; Hagios Nicholas, 1,543.

History. Crete, which had been occupied by British military, naval, and air forces at the end of October, 1940, was subjected to great damage from the terrific German air offensive which commenced on May 20, 1941. Many of the principal towns, including Canea and Candia, were devastated. The Germans after several days of bitter fighting captured the island. Many of the British and dominion troops had been withdrawn but it was announced on Aug. 6, 1941, that about 1,000 British troops who had failed to escape were living in caves and putting up guerrilla resistance against the German forces. See WORLD WAR; GREECE under *History*.

CRICKET. The war eliminated England's cricket programs for 1941, but there were reports of pick-up games wherever England's fighting men were stationed. In the United States, the championship of the New York and Metropolitan District Association was successfully defended by the General Electric Company of Philadelphia, which won twelve games, lost one and drew one. There was no other organized competition.

CRIME. See CHRONOLOGY; FEDERAL BUREAU OF INVESTIGATION; JUVENILE DELINQUENCY; LAW; PRISONS, PAROLE, and CRIME CONTROL.

CRIPPLED CHILDREN. See CHILDREN'S BUREAU.

CRITICAL MATERIALS. See STRATEGIC AND CRITICAL MATERIALS.

CROATIA. See YUGOSLAVIA.

CROPS. See AGRICULTURE and the topics there referred to, especially the major crops; also the countries under *Production*; BARLEY; CORN; COTTON; OATS; POTATOES; RICE; RYE; WHEAT.

CROSS COUNTRY RUNNING. Gregory Rice, the incomparable little runner from Notre Dame, won the national cross country title late in the year when he loped home at the Empire City Race Track in Yonkers, N.Y. He had been runner-up two years in a row to Don Lash, who reigned seven years in a row, but who retired to join the FBI. Rice also won the Metropolitan championship, while Leslie MacMitchell dominated other cross country events, never being defeated in five years as schoolboy and collegian. MacMitchell won the Intercollegiate A.A.A.A. title for the third straight year, thereby matching the record of Cornell's immortal John Paul Jones, who won in 1910, 1911, and 1912.

In the team events, Rhode Island State, led by Robert Nichols, retained I.C.A.A.A. honors and finished on top in the N.C.A.A. competition, dethroning Indiana University. Indiana's Fred Wilt won that individual title. Joe Smith, an unknown from North Medford, won the national marathon championship, while the annual Boston classic fell to Les Pawson.

CUBA. An island republic of the West Indies. Capital, Havana (Habana).

Area and Population. Area, 44,164 square miles; estimated population on Jan. 1, 1940, 4,253,000 (about 60 per cent classified as white and 40 per cent as Negro). Foreign residents in 1939 numbered 346,839. United States citizens residing in Cuba totaled 5,531 on Jan. 1, 1941. Estimated populations of the chief cities in 1938 were: Havana, 568,913; Holguin, 140,854; Camaguey, 139,295; Santiago de Cuba, 107,125; Santa Clara, 99,509; Cienfuegos, 92,258; Matanzas, 72,826; Guantánamo, 68,372; Manzanillo, 65,965.

Defense. The active army on Jan. 1, 1941, numbered 14,314 officers and men; trained reserves, 29,389. The air force comprised 215 men with about 16 planes. The navy consisted of 2 escort vessels, 5 gunboats, an armed transport, and various small coastguard vessels, staffed with 2,640 officers and men. Defense budget in 1941, 17,416,000 pesos.

Education and Religion. About 39 per cent of the adult population was illiterate at the 1931 census. Statistics for 1938-39 showed 424,094 pupils in 8,786 public classrooms, 31,023 pupils in 360 private schools, 3,089 pupils in 145 communities taught by traveling teachers, 8,972 pupils in 138 night schools for workers, 21 high schools, 8 normal schools. The University of Havana has about 6,000 students. Roman Catholicism is the dominant religion but there is no state church.

Production. Agriculture is the main occupation and sugar and tobacco are the chief crops. Cane sugar production in 1941 was 2,406,988 Spanish long tons of 2,240 Spanish lb. (2,777,230 tons, valued at 84,594,426 pesos, in 1940). Sugar exports in 1940 were 1,989,192 long tons (2,687,186 in 1939). The revised U.S. import quota for Cuban sugar during 1941 was 1,959,947 long tons (1,749,796 in 1940). The 1940 tobacco crop was 55,426,170 lb., the largest since 1931; coffee (1940-41), 27,546 metric tons. Corn, cacao, rice, henequen, fruits, and vegetables are other crops. Livestock in

1938 included 5,074,108 cattle, 587,463 horses, and 83,989 mules.

Mineral production in 1940 was valued at an estimated \$11,700,000 (\$10,000,000 in 1939). Exports of mineral ores in 1940 were (in metric tons): Copper, 40,161; iron ore, 109,453; barite, 16,105; chromite, 53,584; gold, 319; magnesite, 554 in 1939; manganese, 133,361; silica, 88,700; others, 11,551. Practically all these ores went to the United States. Industrial production in 1939 was valued at 63,970,624 pesos (excluding products of sugar mills and similar commodities); workers employed numbered 32,010 and raw materials used were valued at 22,234,300 pesos. Tourists arriving in Havana during 1940 numbered 77,814 (62,990 in 1939) and in addition 49,648 transit or cruise passengers stopped at the port (72,645 in 1939). United States tourists spent an estimated \$12,700,000 in Cuba in 1939 against \$2,500,000 expended by visitors from Cuba in the United States.

Foreign Trade. Excluding specie, imports in 1940 were valued at 103,860,000 pesos (105,862,000 in 1939); exports, 127,288,000 pesos (147,676,000). The United States supplied 78 per cent of Cuba's 1940 imports (74 per cent in 1939), and purchased 82.4 per cent of its exports (75.3 in 1939). Total United States exports to Cuba were \$84,693,000 in 1940 (\$81,646,000 in 1939). Imports from Cuba were \$105,425,000 in 1940 (\$104,930,000 in 1939), of which sugar for consumption in the United States accounted for \$68,273,000 (\$72,772,000 in 1939). See TRADE, FOREIGN, for 1941 data.

Finance. Actual 1940 budget receipts were 75,670,000 pesos and expenditures 79,238,000. The 1940 budget estimates, balancing at 76,000,000 pesos, were extended into 1941 when Congress failed to enact a new budget. Subsequent appropriations increased the 1941 budget to 78,742,000 pesos. The consolidated public debt on June 30, 1941, was \$125,973,000 (foreign, \$119,000,000, domestic, \$11,174,000). The floating debt approximated 90,000,000 pesos on Jan. 1, 1941. The Cuban peso's exchange value remained stable at \$1 through 1937 but depreciated to an average of \$0.928 in 1939 and \$0.901 in 1940.

Transportation. Operating statistics of the common carrier railways, with 3,130 miles of line, were for 1940: Freight, 16,859,819 metric tons; passengers, 6,133,692; revenues, 15,676,240 pesos, expenses, 13,986,846 pesos; net profit, 1,689,394 pesos. Highways in 1941 extended 2,324 miles (2,000 miles paved) and cart roads 1,500 miles. Incoming and outgoing planes in the international air services during 1940 numbered 3,036; they carried 54,031 passengers and 101,773 lb. of mail.

Government. The Constitution promulgated Oct. 10, 1940 (see YEAR BOOK for 1940, p. 171), vested executive power in a President elected for four years. Legislative power rests in a Senate of 54 members (nine from each province) elected for six years, with one-third replaced every two years, and in a House of Representatives containing one member for each 35,000 inhabitants (about 120 in all), with one-half the members elected every two years for four-year terms. (Under a temporary arrangement, one-half of the previous Senate and House retained office along with the new Senators and Representatives elected in 1940.) The President appoints a Premier, who retains office only so long as he enjoys the support of a majority of the House of Representatives. The President, members of Congress, and provincial and municipal officials are elected by compulsory direct popular male

and female suffrage. President in 1941, Col. Fulgencio Batista, who assumed the Presidency Oct. 10, 1940, following his election on July 14, 1940.

HISTORY

Revolt Plot. An attempt by the army and navy chiefs of staff to bring President Batista under their control provoked a dramatic but bloodless test of strength on the night of Feb. 3, 1941, in which the President emerged the victor. When Batista assumed the Presidency, he was succeeded as chief of staff by Col. José Pedraza, who had participated with Batista in the "sergeants' revolt" of 1933. Pedraza and Col. Angel A. González, head of the navy, resented Batista's policy, adopted after he became President, of transferring certain departments of the government from military-naval to civil authorities. In January they refused to permit a new police chief, appointed by the President to curb wide-open gambling in Havana, to assume office. Shortly afterwards they called a meeting of army and navy officers and demanded that they choose between them and the President. Most of the officers apparently remained loyal to Batista. Nevertheless Pedraza and González, with a few associates, on February 3 demanded that Batista consult them with regard to his policies.

Accepting this challenge, Batista ordered reinforcements to the Presidential Palace from Cabanas Fortress. With two aides he then proceeded to army headquarters at Camp Colombia, called together the armed forces, announced that he was assuming personal command, and ordered the arrest of the dissident army-navy chiefs. The next day Colonel Pedraza and three of his associates were deported to the United States by plane. The President appointed new chiefs of the army, navy, and national police and made other changes in the officer personnel. Although he had suspended constitutional guarantees for 15 days, the precaution proved unnecessary. Virtually all political parties, as well as the armed forces, strongly endorsed the President's stand. There was no disorder and on February 5 constitutional guarantees were restored.

Political Developments. The President's prestige was enhanced by his handling of the threatened army-navy revolt. Nevertheless his administration during the remainder of the year was beset with financial and economic problems that proved difficult to solve, partly because of the obstructionist tactics of the Opposition in Congress. The vital sugar industry was hard hit by the loss of its normal European markets. The war provoked a rapid increase in the cost of living, which in turn caused unrest among the laboring classes. Toward the end of the year there was an alarming increase in strikes. A general strike was averted when the President on November 7 signed decrees increasing wages of all workers from 10 to 20 per cent.

Early in the year the President submitted proposals, including an income tax, for eliminating the chronic budget deficit (estimated at \$8,000,000 for 1941). He also recommended the adoption of compulsory military service and asked Congressional authority to contract a \$25,000,000 loan offered by the Export-Import Bank of Washington. Opposition obstruction and controversies over patronage prevented action on the President's recommendations during the regular session which adjourned May 27. The President then called a special session for July 14 to deal with tax reforms and the budget deficit. Because of friction between the Cabinet and Congress, which threatened to block all legislation, the Cabinet resigned July 16.

A new Cabinet, again headed by Senator Carlos Saladrigas, was formed the next day.

After the opposition had exhausted every parliamentary delaying device, the House of Representatives on July 24 approved an administration bill for a 20 per cent flat increase in all taxes for the balance of the fiscal year and for a \$6,000,000 issue of Treasury obligations. It was September 6 before the Senate, after violent debate, approved this emergency tax bill. Meanwhile President Batista on August 2 had formally requested ratification of the \$25,000,000 loan, which was authorized by the Export-Import Bank on May 1, subject to the approval of the Cuban Congress. The President stated the credit would be used to stimulate agriculture and for public works designed to meet the serious economic crisis. At the insistence of the Export-Import Bank, the bill stipulated that there must be no default on the loan and established procedures for raising funds to service it if taxes proved insufficient.

Opposition efforts to obstruct this measure provoked fistcuffs in the Senate on August 4 in which the Premier and many Senators engaged. The four Opposition parties then voted to boycott the Senate sessions until "the necessary guarantees for the minority have been restored." An agreement for resumption of the sessions was soon reached, but it was October 29 before the bill finally passed the Senate. It then went to the House of Representatives, where legislation had been virtually paralyzed by the failure of many Representatives to attend.

On October 27 the House accepted the resignation of its President, who withdrew in protest against these delays. Authorization for the \$25,000,000 loan was later given by the House. The law received the President's signature on November 21. President Batista was still awaiting action on legislation reorganizing the fiscal system, establishing a national bank of issue, regulating foreign exchange transactions, and regulating the relations between President and Congress under the new Constitution. On September 15 leaders of the various political parties agreed to postpone to Mar. 15, 1942, the Congressional elections set for December 1.

Terrorism. The sporadic outbreaks of terrorism that had marked the entire preceding decade recurred during 1941. The University of Havana, closed since the murder of two professors and other violence the preceding December, was fully reopened Jan. 24, 1941, when students in the School of Medicine ended their strike. A week later a secret terrorist organization assassinated an employee of a Havana radio station, who was apparently mistaken for a former police official. On April 25 Julio Ayala, leader of one of the parties supporting President Batista, was seriously wounded by assassins in a Havana suburb. A sudden outbreak of terrorist bombings on the night of August 18 injured 12 persons and caused considerable property damage. Fifteen persons were arrested, including a former officer in the Spanish Republican army.

Anti-Communist Drive. During the first half of 1941 the Cuban Communist party aroused such hostility that a bill making it illegal, introduced in Congress by followers of ex-President Mario C. Menocal, appeared likely to pass. Communist support of Nazi-Fascist attacks upon British and American "imperialism" caused a split in the Communist-dominated Confederation of Cuban Workers in February. The secessionists formed the pro-democratic Socialist Labor party. The Communists

were the only group to oppose the military conscription bill. However the agitation against Communist activities died down after the outbreak of the Russo-German war and the immediate worldwide reversal of the Communist party line (see COMMUNISM). Thereafter Cuban Communists urged full support of the United States, Britain, and the Soviet Union and led the campaign to curb Nazi-Fascist activities in Cuba.

Measures Against Axis. Although President Batista in 1940 was attacked by Opposition groups for his "lukewarm" support of the United States, the Cuban Government during 1941 went further than most of the other Latin American republics in supporting Washington's policy toward the Axis. On January 29 the President signed a decree designed to suppress totalitarian propaganda. In applying this measure the Government prohibited radio broadcasts in German, banned the singing of Communist, Nazi, Fascist or Falangist songs, and prohibited attacks upon the United States or other democratic nations. As a gesture of solidarity with the United States, the Government on March 31 seized the Italian freighter *Recca* in Havana harbor. The Italian consulate in Havana was closed June 30.

Early in July an investigating body was established to root out totalitarian espionage and fifth column activities. Later that month the discovery of a large stock of illicit propaganda leaflets and documents in the home of a German in Havana was followed by the arrest of nine members of the outlawed German Bund and the closing of all German and Italian consulates. The Axis powers retaliated by closing Cuban consulates in their own and occupied territories. On October 27 the House of Representatives unanimously approved a resolution condemning the execution of hostages by Germany in France and other occupied countries.

The activities of Spanish Falangist representatives in Cuba and attempts by the Franco Government to bring pressure on the Batista regime strained relations between the two countries. Early in the year the newly appointed Spanish Consul General in Havana was declared *persona non grata*. In August Falangist soup kitchens and social welfare centers in Cuba were closed. Requests from Madrid for the extradition of Spanish Loyalist refugees in Cuba were bluntly rejected. The Cuban House of Representatives adopted on October 9 a resolution urging amnesty for Spanish political refugees in France.

Relations with United States. Friction with the Axis was accompanied by closer political and economic relations with the United States. On January 9 the Export-Import Bank of Washington authorized a loan of \$11,300,000 to the Cuban Sugar Stabilization Institute to finance the production of 400,000 tons of surplus sugar. A bill authorizing the Government to accept this loan was passed by the Cuban Congress and signed by President Batista March 21. On May 1 the Export-Import Bank authorized another loan of \$25,000,000 to the Cuban Government (see above). At the end of January the U.S. Government sent a five-man mission to Cuba which conducted a two-months' agricultural survey. Its recommendations were incorporated in the bill providing for the disbursement of the \$25,000,000 loan.

Negotiations for a new reciprocal Cuban-American trade treaty, supplemental to that of 1934, were opened in Washington in July and concluded with the signature of the new treaty in Havana December 23. It provided for additional reductions by each country in the tariff rates on speci-

fied imports from the other, as well as other mutually advantageous changes. Cuba's vital interest in these negotiations was intensified when the U.S. Government on August 12 established a maximum price of three and one-half cents a lb. for raw sugar. Cuban sugar planters declared this price "totally unfair" to Cuba and the Cuban Government immediately sought a reconsideration of the order through its Ambassador in Washington. The U.S. Government declined to raise its price ceiling on sugar but mollified the Cuban producers and planters in November by offering to purchase Cuba's entire 1942 sugar crop.

After President Roosevelt's message of June 20 on the *Robin Moor* sinking, the Cuban Cabinet unanimously declared its solidarity with the United States. In July President Batista appointed a commission to cooperate with the United States in applying its blacklist to Axis supporters in Cuba. The annual July 4 celebration in Havana was described as the greatest demonstration of Cuban friendship for the United States in the island's history. President Batista on October 10 declared that Cuba's policy was one of "open alliance" with the United States, Great Britain, Russia, and other nations fighting for democracy. He urged elimination of the neutrality plank in the majority coalition's platform. In June Pan American Airways completed construction of a huge airfield at Camaguey which was expected to be used by the U.S. air force in the event of a war threat to the Caribbean or the east coast of South America.

Early in November an agreement was signed in Washington giving Cuba unspecified amounts of defense equipment and materials under the Lend-Lease Act. Details of the accord were not revealed, but Secretary of State Hull indicated that Cuba would pay for these defense materials through exports of sugar, tobacco, and manganese to the United States. Subsequently it was announced that Cuba's first naval-air base would be constructed at Punta Gorda, in Mariel Bay. After the Japanese attack of December 7 upon the United States and the ensuing German-Italian war declarations, both Houses of the Cuban Congress by unanimous vote declared war upon Japan (December 9) and upon Germany and Italy (December 11).

On December 19 Congress gave final approval to President Batista's request of December 6 for special war powers, affecting both foreign and internal affairs. A state of national emergency was declared. The compulsory military service measure was temporarily shelved on December 21. Some thousands of Axis aliens were rounded up and interned.

For the death of ex-President Mario G. Menocal on Sept. 7, 1941, see NECROLOGY.

See COMMUNISM; LEND-LEASE ADMINISTRATION; NAVAL PROGRESS; PAN AMERICANISM.

CURAÇAO. A Netherlands West Indian colony consisting of two groups of islands (1) Aruba, Bonaire, and Curaçao just north of Venezuela (2) Saba, St. Eustatius, and St. Martin (southern part only) just east of the Virgin Islands. Total area, 403 square miles. Population (Jan. 1, 1940), 105,617. Capital, Willemstad (on Curaçao), 31,264 inhabitants in 1940. Vital statistics (1939): 3,578 births, 1,034 deaths, and 845 marriages. Education (1939): 55 schools and 14,403 pupils.

Production and Trade. Maize, phosphate of lime, and salt are the main products. Livestock (1939): 38,369 cattle, 6,957 goats, 6,157 sheep, and 1,146 hogs. Oil refining is the most important industry.

Trade (1939): 307,521,128 guilders for imports and 344,067,310 guilders for exports (guilder averaged \$0.5334 for 1939). Air services of K.L.M. (Royal Dutch Air Lines), on Aug. 19, 1941, were expanded to include services linking Kingston in Jamaica, with Curaçao, Aruba, and Trinidad. Connections are made, with Pan American Airways, to North and South America. Shipping (1939): 12,639 vessels aggregating 129,388,025 cubic meters entered the ports.

Government. Budget (1939): 11,822,760 guilders for revenue and 11,587,117 guilders for expenditure. Curaçao is administered by a governor, assisted by a council of 4 members, and a States council of 15 members (10 elected by the voters and 5 nominated by the governor). Governor, G. J. J. Wouters (appointed Apr 7, 1936).

CURLING. The Canadian team retained the Gordon International Medal, chief bauble for curling, in 1941, winning thirteen of the nineteen matches with United States curlers and winning by a point total of 272 to 210. The Gordon Grand National and the Richard S. Emmet Memorial Medals fell to the rinks of the Schenectady (N.Y.) Curling Club, on whose ice the play was held. The rink skipped by R. D. Thomson took its third consecutive Gordon award.

CUSTOMS, Bureau of. Many functions of the Customs Service continue from year to year with little change. Such continuing functions are disregarded in the present article which is confined to those activities and operations during 1941 which require special mention. Reference should be made to articles in previous YEAR BOOKS for information regarding the remaining activities of the Customs Service.

Customs Collections. For the second successive year customs collections exceeded those of the previous year. The total of \$392,233,153 was almost 12 per cent larger than in 1940 and 22 per cent larger than in 1939. Increased collections during 1941 were not expected at the beginning of the year. Revenues during the later months of the fiscal year 1940 had diminished with the curtailment of imports from Europe due to the extension of the war area, and this decline continued during the early months of the fiscal year 1941. However, large volumes of raw wool and of various dutiable metals necessary for the defense program resulted in greatly increased collections in February, 1941, and subsequent months so that more than half of the year's total collections were concentrated into the last five months.

The increase in customs collections in 1941 was particularly remarkable in the face of a sharp decline in revenue derived from European importations which amounted to only \$80,256,000 compared with \$130,709,000 in 1940 and \$148,650,000 in 1939. To offset this decline, revenue on imports from every other continental area increased. Customs revenue on goods from Oceania more than trebled; that on South American imports more than doubled; while that on importations from North and Central America, Asia, and Africa increased approximately 15, 9, and 3 per cent, respectively. The augmented collections from these areas represent not only the demand of this country for certain strategic materials but also its ability to take over the market for many commodities formerly sent to Central Europe. Revenue on imports both from Chile and from the Belgian Congo was more than nine times as much as for the previous year, and that on imports from Bolivia and

from Newfoundland was approximately six times as much. Duties on imports from Australia more than quadrupled while collections on imports from Argentina, Uruguay, and Mexico were more than double those of the preceding year.

Volume of Business. The various transactions connected with the entry of merchandise, vessels, or passengers almost without exception declined numerically during the fiscal year 1941. Despite the large increase in revenue, fewer entries of merchandise were made, a phenomenon caused by the character of those imports which yielded the predominant portion of the revenues. Each entry of such articles as wool, sugar, and metals yields a far higher average amount of duties than do entries of the commodities which in the past found their way into this country from Europe in small quantities but at frequent intervals. The number of notices of intent to export with benefit of drawback, on the other hand, was substantially greater in 1941 than during the previous year, in consequence of the increase in the number and value of exports over 1940.

With one single exception, a smaller number of each type of the various vessels and vehicles, carrying fewer passengers, entered in 1941 than during the preceding year. In contrast to the general trend, however, international airplane traffic exhibited a pronounced expansion, the number of aircraft entering the United States in 1941 being 26 per cent greater and airplane passengers 20 per cent more numerous than in 1940.

Enforcement of Customs Laws. As a result of the reduced traffic, seizures made by customs officers were fewer in number and smaller in value than during the previous year, the number of seizures declining to 8,373 or 19 per cent less than in 1940 while the value (\$1,182,000) decreased 6 per cent. In connection with these seizures, 526 arrests were made, an increase of 5 per cent and, of the cases disposed of, 403 convictions were secured or 69 per cent of the total. Almost 10 per cent (789) of the total number of seizures were made in connection with attempts to smuggle marihuana or other narcotics, a practice particularly frequent along the Mexican border. The narcotic cases concluded during the year resulted in 146 convictions and only 26 acquittals. Despite the diversion of the time of some customs officers to investigations involving defense activities, therefore, the primary functions of the Customs Service, namely, the collection of revenue and the prevention and detection of smuggling, was not neglected.

Cost of Administration. Total revenues collected by the Customs Service during the year, including revenues collected for other departments, amounted to \$429,544,621, an increase of \$46,265,046 from the previous year. Expenses of administration, however, were decreased by \$504,250 to \$20,623,423 in 1941 and the cost to collect \$100 was only \$4.80 in 1941 as compared with \$5.51 in 1940.

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CUTTING TOOLS. See MACHINE BUILDING.

CYCLING. Military and naval activity abroad kept cycling decidedly moribund in 1941, with the exception of three domestic title events. There was no six-day racing Tom Saetta of Brooklyn took the sprint championship and Mike De Filippo of Newark the paced title in National Cycling Association competition. The Amateur Bicycle League of America crowned Marvin Thomson of Chicago senior road champion and the junior title was taken by Andrew Bernadsky of San Francisco,

while Miss Jean Michels of Chicago won girls' honors. Bob Stauffacher of San Francisco took the Senior track championship of the A.B.L. and Chuck Edwards of Chicago the junior. Stauffacher also won the Century Road Club's senior title.

CYCLOTRON. See CHEMISTRY, PURE; PHYSICS.

CYPRUS. A British island colony in the eastern Mediterranean, 40 miles from Asia Minor and 60 miles from Syria. Area, 3,572 square miles. Population (1938), 376,529. Vital statistics for 1940 (rate per 1,000): 34.6 births, 12.2 deaths. Chief towns: Nicosia (capital), 23,677 inhabitants, Limassol, 13,349; Larnaca, 11,872; Famagusta and Varosha, 9,979; Paphos, 4,517; Kyrenia, 2,137. The majority of the inhabitants profess the Christian faith; about one-fifth are Mohammedans.

Production and Trade. The main products are wheat, barley, olives, cotton, raisins, carobs, potatoes, linseed, wine, olive oil, cupreous pyrites, asbestos, gold, chrome iron ore, gypsum, and terra umbra. Trade (1938): £2,246,435 for imports and £2,478,256 for expenditure. Shipping (1938): 2,995,650 tons entered and cleared. Roads (1940): 2,581 miles.

Government. Finance (1941): £1,082,713 for expenditure (estimated). Public debt (Dec. 31, 1938), £822,300. As a result of the political disturbances of 1931 the legislative council was abolished (see YEAR BOOK for 1931) and the governor was granted the power to legislate. The executive council was retained. During October of 1933 an advisory council was established to advise the government on legislative and other measures. Governor and Commander-in-Chief, Charles Campbell Woolley (appointed during September, 1941).

History. Income tax in Cyprus became law during July, 1941, and was deemed to have come into operation on Jan. 1, 1941. Individuals whose income does not exceed £150 will be exempt. During June the authorities were putting the finishing touches to the island's defenses. Australian troops were among the British garrison, and there were troops of the local defense force and the Cyprus Regiment which had seen service in East and North Africa, Greece, and elsewhere.

Regulations were made imposing penalties for looting and spreading alarmist rumors. Motor traffic was suspended between 10 p.m. and sunrise without special permit. Women and children were voluntarily evacuated, some being sent to South Africa and Rhodesia. By the middle of June practically every British woman had left the island, and the evacuation of the entire Jewish population was completed. About 500 Polish refugees were among the evacuees. The native population in the towns was evacuated to the country districts. On Sept. 5, 1941, heavy reinforcement of the Cyprus defenses was reported in an announcement of a six-day inspection of Cyprus, Palestine, and Syria, mainly by airplane, just completed by Gen. Sir Claude Auchinleck, British commander in the Middle East.

See SEISMOLOGY.

CZECHOSLOVAKIA. A former Central European republic (capital, Prague), partitioned among Germany, Poland, and Hungary in 1938 and 1939, with the exception of part of Slovakia which became a nominally independent republic under German protection, with its capital at Bratislava. The manner in which the Czechoslovak republic was partitioned was described in detail in the YEAR BOOKS for 1938 and 1939 and is summarized in the accompanying table.

PARTITION OF CZECHOSLOVAKIA

Territory annexed	Date of cession or seizure	Area, sq. mi.	Estimated pop. 1939
To Germany:			
Sudetenland	Sept. 29, 1938	11,071	3,653,292
Bohemia-Moravia	Mar. 16, 1939	19,058	6,804,875
To Poland:			
Teschén district ^a	Nov. 1, 1938	419	241,698
To Hungary:			
Parts of Slovakia and Ruthenia ^b	Nov. 2, 1938	4,566	1,027,450
Remainder of Ruthenia	Mar. 14, 1939	4,283	552,124
Additional Slovak districts	Apr. 4, 1939	683	80,923
Slovakia, Republic of	Mar. 14, 1939 ^c	14,165 ^d	2,369,163 ^d
Total		54,245	14,720,535

^a Occupied by Germany in September, 1939; 225 square miles were transferred to Slovakia on Oct. 21, 1939. ^b Ruthenia is also referred to as Carpatho-Ukraine. ^c Date of Slovak declaration of independence. ^d Excluding areas transferred from Poland to Slovakia by Germany of Oct. 21, 1939. Within the frontiers fixed by the German-Slovak treaty of Nov. 31, 1939, Slovakia had an area of 14,706 square miles and a population at the end of 1939 of 2,691,000.

The Sudetenland was annexed as an integral part of the German Reich. Hungary similarly incorporated in its national territory the districts acquired from Czechoslovakia. Bohemia and Moravia were established as a protectorate within "the territory of the Great German Reich." Slovakia on Mar. 18, 1939, signed a treaty accepting German military protection. Neither Slovakia nor the Protectorate of Bohemia and Moravia were recognized by Great Britain, the United States, and various other powers. See separate articles on BOHEMIA AND MORAVIA AND SLOVAKIA.

Czechoslovak Provisional Government. Upon the outbreak of the European War, Czech and Slovak political leaders in exile, headed by ex-President Eduard Beneš, established headquarters in London and declared war on Germany (Sept. 8, 1940). On Nov. 17, 1939, a Czechoslovak National Committee was formed in Paris, with Dr. Beneš as its head. On the same day France recognized this committee as the legal government of Czechoslovakia. The National Committee declared "null and void" the agreement signed between Chancellor Hitler and President Hacha of Czechoslovakia on Mar. 15, 1939, providing for the final dismemberment of the Republic.

In February, 1940, the British Government declared the restoration of Czechoslovak independence to be one of Britain's war aims. Upon the collapse of France, the Czechoslovak National Committee was transferred from Paris to London. The British Government on July 21, 1940, formally recognized "the Provisional Czechoslovak Government established by the Czechoslovak National Committee." Dr. Beneš, acting as President of the Republic, appointed a Cabinet headed by Mgr. Jan Srámek, with Jan Masaryk, son of the founder of Czechoslovakia, as Foreign Minister. On Dec. 10, 1940, President Beneš announced the establishment in London of a State Council of 40 members, including representatives of all Czechoslovak political parties, to serve as a provisional parliament until the end of the war. Rudolf Bechnyes was named president of the Council.

A military accord was signed by the British and Czechoslovak Governments Oct. 25, 1940, which made possible the organization in Britain of a Czechoslovak army and air force of some 20,000 men.

History. A notable accomplishment of the Czechoslovak Government in London during 1941 was the winning of complete recognition from Great Britain, the United States, and the Soviet Union of its status as the legal government of the Czechoslovak Republic.

slovak Republic. Progress toward this goal had been made in 1939 and 1940, particularly through the provisional recognition extended by the British Government July 22, 1940 (see *YEAR BOOK* for 1940, p. 176). The U.S. Government had continued to recognize the Minister and consular representatives in America appointed by the Prague Government before the overthrow of the Czechoslovak Republic, but had no relations with the Government-in-Exile. Soviet Russia withdrew its diplomatic representative from Prague in 1939.

On July 18, 1941, the British Government extended full recognition and announced its decision to accredit a Minister to Dr. Beneš as President of the Czechoslovak Republic. The United States followed suit July 30. On July 18 Soviet-Czechoslovak diplomatic relations were restored through a treaty signed in London, providing for immediate exchange of Ministers. The two governments agreed "to aid and support each other in every way in the present war against Hitlerite Germany." Russia consented to the formation on Soviet territory of "national Czechoslovak military units under a commander appointed by the Czech Government in agreement with the Soviet Government." These troops, however, were to operate under the direction of the high military command of Russia. The organization of a Czechoslovak legion in Russia, principally from Czech soldiers who fought with Poland against Germany and were subsequently confined in Soviet concentration camps, began soon afterwards. Gen. Serge Ingr, commander in chief of the Czechoslovak forces, announced in London September 30 that a Soviet-Czech military accord had been concluded (September 28) in line with the provisions of the July 18th agreement. The expense of organizing and maintaining the Czechoslovak units in Russia was to be met through a credit advanced by the Soviet Government.

The Czechoslovak-Soviet military accord aroused some suspicions among members of the Polish Government-in-Exile. Nevertheless plans for close Polish-Czechoslovak collaboration in postwar Europe (see *YEAR BOOK* for 1940, p. 176) were carried forward. The two Governments-in-Exile announced March 25 that mixed committees were working out details of a scheme for closer cooperation during the war and for a post-war confederation that might include other countries in eastern and central Europe. The Czechoslovak, Polish, Greek, and Yugoslav delegations to the conference of the International Labor Organization in New York City on November 3 issued a joint declaration calling for the formation by their four nations of a bloc that would serve as the nucleus for a larger post-war confederation of Central and Eastern European peoples.

The Czechoslovak Government joined with the other Allied powers in the pledge of June 12, 1941, to continue the struggle with the Axis until victory was won. It likewise formally approved the Allied resolutions of September 24 endorsing the Roosevelt-Churchill Atlantic declaration and providing for joint action to meet the post-war needs of "countries liberated from Nazi oppression."

The Czechoslovak leaders in London maintained close contact with conditions in Bohemia and Moravia and directed the organization of the underground movement there in preparation for the overthrow of German rule. On October 1, immediately after Hitler sent the Gestapo terrorist Reinhard Heydrich to Prague as Reich Protector, President Beneš and Foreign Minister Jan Masaryk broadcast appeals from London to the Czech people to refrain from demonstrations and strikes until

the Government-in-Exile gave the signal for revolt. They warned the Czechs that premature action would expose the nation to terrible reprisals by "cynical murderers who stop at nothing." See *BOHEMIA* and *MORAVIA* under *History* for developments in the Protectorate.

A reconstruction of the Cabinet, without change in personnel or policies, was carried out by President Beneš on October 27. By a decree of November 4 President Beneš named Prokop Maxa, former Czechoslovak Minister to Moscow and Sofia, as head of the State Council, which was further enlarged. Addressing a session of the State Council on November 25, Dr. Beneš made important declarations of policy. He said that Slovakia was regarded as an integral part of Czechoslovakia; that the final decision about confederation with Poland would "be made by our liberated people themselves"; that his Government was based on "the absolute democracy and sovereignty for our people"; that "for us the 'Protectorate' and 'Protectorate' President and Government do not exist. Neither does there exist an independent Slovakia. . . ."

On December 16 President Beneš issued a decree declaring the Czechoslovak Republic in a state of war with all countries which were in a state of war with Great Britain, the U.S.S.R., or the United States.

See *GREAT BRITAIN* under *History*, *LEND-LEASE ADMINISTRATION*.

DAHOMEY. See *FRENCH WEST AFRICA*.

DAIRYING. The announcement of April 3, 1941, by the U.S. Department of Agriculture concerning an expanded food production program included dairy products among the commodities required in greater volume. To assure prices remunerative to producers a minimum price of 31 cents a pound for butterfat was guaranteed to June 30, 1943. With cheese, evaporated milk, and dried skim milk particularly in demand for export under the lend-lease act, these commodities have been purchased by the government at prices which have encouraged expansion of their production rather than that of butter. Still further stimulus was furnished by the 1942 food production goals, announced by the Department of Agriculture in September, which called for a 7 per cent increase in total milk production.

In the face of steadily rising prices and a generally favorable feed situation, total milk production ranged from 3 to 8 per cent higher than in 1940 for every month of 1941. It closely approached 117 billion lb., an increase of 5 per cent over 1940. The total number of milk-cows increased only about 3 per cent in the same period, reaching an estimated total of 26.5 million at the end of the year. The average milk production per cow of approximately 4,700 lb was the highest on record. Liberal feeding of grain and by-product feeds prevailed throughout the year, with an estimated average daily allowance per cow of 4.85 lb. as compared with 4.56 lb. in 1940 and 4.03 lb. for the preceding 5-year period.

The ratio of butterfat to feed prices was more favorable to the dairy producer during the first half of 1941 than a year earlier. Feed prices, particularly for by-product feeds, increased markedly during the closing months while butterfat prices failed to show the usual seasonal increase, resulting in a ratio during the last quarter of the year which was less favorable than that of the preceding year or the 1929-34 average.

In 1940 a fluid milk equivalent of about 54 bil-

lion lb., or 48.5 per cent of the total milk produced, was utilized in the manufacture of butter, whole milk cheese, concentrated milk products, and ice cream, and 10¼ billion lb. of skim milk and butter-milk was dried, condensed, or converted into cheese. Increased production of cheese, evaporated milk, and condensed milk utilized about 20 per cent more milk for these purposes in 1941 than in 1940. Ice-cream production also increased in 1941, while approximately the same percentage of milk went into butter production as in the previous year. In all, both the total amount and the percentage of whole milk going into manufactured products in 1941 exceeded the 1940 level by a considerable margin. The production of dry skim milk in 1941 was about 10 per cent greater than the 1940 total of 472 million lb. yet this quantity proved inadequate for domestic needs and lend-lease shipments. In November, 1941, the Secretary of Agriculture issued a plea for a further 40 to 50 per cent increase in the production of this commodity.

Wholesale prices of butter and cheese were 2 and 36 per cent higher respectively in December, 1941, than a year earlier. Average prices paid to farmers for butterfat and whole milk increased 18 and 30 per cent respectively and the retail price of whole milk on 25 principal markets increased about 15 per cent over the same period.

The average annual per capita consumption of principal dairy products in 1941 included 348 lb. of whole milk (as milk and cream), 17.8 lb. butter, 6.2 lb. cheese (not including skim milk cheese), 20.7 lb. condensed and evaporated milk, and 2.88 gal. ice cream.

Under the general commodities purchase program, the Federal Government purchased approximately 168 million lb. of cheese, 749 million lb. of evaporated milk, and 37 million lb. of dry skim milk, much of which was transferred to other countries under the term of the lend-lease act. In order to stabilize butter prices, the Dairy Product Marketing Association purchased about 5½ million lb. of butter, which is considerably higher than for 1940 but far below the 1938 level of 114 million lb. The privilege of using Blue Food Stamps to purchase butter was suspended from June 1 to October 31, 1941, but during the seven months that the plan was in operation approximately 425 million lb. of butter was retailed in this manner to low income families.

A depressing factor on current butter prices was the extremely heavy stocks of butter in cold storage, amounting to 114,611,000 lb. at the close of the year, or 176 per cent greater than a year earlier. All types of cheese in storage on this date totaled 201,685,000 lb., about 56 per cent larger than a year earlier. Manufacturers stocks of evaporated milk and dry skim milk on Dec. 1, 1941, were 7 per cent larger and 50 per cent smaller respectively than for the same date in 1940.

For the second consecutive year the value of dairy exports far exceeded the imports. During the first 9 months of 1941, exports, mainly of evaporated and dried milk and cheese, were valued at \$42,366,826 as compared with \$12,440,514 for the corresponding period of 1940. Over the same period imports totaled \$3,504,598 in 1941 and \$6,508,496 in 1940, with foreign type cheese the major item of import.

World Conditions. Information compiled by the Office of Foreign Agriculture Relations, U.S.D.A., indicated that the cumulative effects of the scarcity of feed, particularly concentrates, not only further reduced the average milk production per cow during 1941 but also forced the slaughter of large

numbers of milk cows in the principal dairy producing countries of Continental Europe. Germany, with the dairy exports of the occupied countries at her demand, was in a favorable position during the winter of 1940-41, but all indications pointed to much smaller supplies of these products in the winter of 1941-42. France, extremely deficient in all dairy products during 1940-41, faced an even greater shortage in 1941-42. The United Kingdom, always a large importer of dairy products, endured a severe shortage during the winter of 1940-41, but with increasing supplies from Empire Countries and the United States, the situation was greatly improved at the end of 1941. The decision of the British Food Ministry to reduce butter importations about 40 per cent below that of the previous season and increase cheese imports encouraged considerable shift from butter to cheese production in Australia, New Zealand, and Canada. Even so, the end of 1941 found large butterstocks accumulating in Canada while the efforts to fulfill her contract of delivering 112 million lb. of cheese to Great Britain forced a reduction of approximately 13 million lb. in home cheese consumption.

The dairy industry of Argentina enjoyed the greatest year of production and trade in history. Butter, cheese, and casein production were all increased significantly over 1940 levels, while storage stocks were much lower at the end of 1941 than a year earlier. Great Britain was the main outlet for butter. The United States purchased large quantities of casein and far above normal amounts of cheese to replace types formerly obtained from Italy and indications were that trade would be further stimulated by the new U.S.-Argentina agreement which practically halved the import duty on both products.

E. C. ELTING.

DAKAR. See FRANCE under *History*; FRENCH WEST AFRICA.

DALMATIA. See ITALY and YUGOSLAVIA, under *History*.

DAMS. Design and construction of dams is an important feature of the numerous works for irrigation, flood control, river regulation, inland navigation, power development, and municipal water supply. Most of these structures are built by the Federal government, through the Bureau of Reclamation or the Engineer Corps, U.S. Army. Others are built by State governments, semi-governmental organizations (such as the Tennessee Valley Authority), by municipalities, power companies, and local organizations for irrigation or flood control. Many of the reservoirs thus formed serve two or more of the purposes noted above, especially for irrigation and power.

At the great Boulder dam, 726 ft. high (highest in the world and completed in 1936), the water for the first time reached the spillway crest in August, 1941, and has since been drawn down by opening the gates, so that by April, 1942, there will be ample storage for flood waters. The Grand Coulee dam, on the Columbia River, was practically completed and two of its 18 power units (each with a turbine of 150,000 h.p. and a generator of 108,000 kilowatts) were put in service, two years ahead of the scheduled time.

During 1941, the U.S. Bureau of Reclamation completed eight dams, making a total of 163, with nine others still under construction. It has also a total of 364 pumping plants and 16,000 miles of canals and lateral ditches. Four hydroelectric power plants were started, making a total of 28 with a

combined capacity of 954,000 kw, and for national defense purposes this capacity is to be doubled by 1943. For postwar construction, to provide employment, the Bureau has 50 projects planned, each with power possibilities.

To feed the 13-mile Continental-Divide tunnel, for carrying water from the western slopes to irrigate lands on the eastern slopes of the Divide, there will be a main reservoir on the Colorado River, formed by the Granby dam, to be started in 1942, and an auxiliary reservoir on the Blue River, with the Green Mountain dam, 50 per cent completed. This project will have six power plants. The highest earth dam yet built is to be the Bureau's 445-ft. Anderson dam on the Boise River, in Idaho. This dam, begun in 1941, is to serve a combination of irrigation, flood control, and power development.

Dams completed by the Engineer Corps, U.S. Army, in its works for river regulation and flood control included: (1) the Wapapello dam on the St. Francis River near Poplar Bluffs, Mo.; (2) the Mahoning dam of the flood-control project for the protection of Pittsburgh, Pa.; and (3) the Fern dam on the Long Tom River in Oregon. Completion of this last dam, in December, marked the beginning of an \$84,000,000 program for the development of the Willamette Valley by a series of dams and other works for irrigation, flood control, power, water conservation, and reduction of stream pollution. As a first step in regulation of the Cumberland River, work was begun on the Wolf Creek dam near Jamestown, Ky.

Among unusual features in dam construction was the recovery of gold from the gravel excavated for concrete making at the Friant dam (Bureau of Reclamation) in California. After deducting the cost of recovery, the net profit was divided equally between the Federal Government and the contractor. At the Mud Mountain dam (U.S. Engineers) on the White River, in Washington, the work was protected from rain and snow by a canopy or tent 320 x 400 ft., suspended from cables spanning the canyon. At the same dam, the gravel and earth for the fill were passed through oil-burning heater drums to regulate the amount of moisture.

In the comprehensive project of the Tennessee Valley Authority, ten dams with locks are required for a 9-ft. navigation channel in the Tennessee River from the Ohio River to Knoxville, 650 miles. Seven are now completed and the others are scheduled for 1942 to 1944. Other dams are to be built on the river and its tributaries for storage and especially for power to serve extensive plants for the production of aluminum. Among smaller semi-public projects is the Kingsley dam on the North Platte River, which was finished in 1941 for the Central Nebraska Public Power and Irrigation District. In Texas, the Sabine-Neches Reclamation District proposes a dam on the Neches River, near Frankston, to supply a group of small cities with water for irrigation, domestic, and industrial purposes.

Among dams for municipal water supply is the Merriman dam to form a reservoir for the new Delaware River water supply to New York City. Foundation work, completed in 1941, included the sinking of a row of pneumatic caissons 160 ft. through loose ground to solid rock, as a base for the concrete core wall of the earth and rock fill. The dam is to be finished in 1944. At San Diego, Calif., contracts were let for the San Vicente dam to increase the water supply; it will be a concrete dam, 250 ft. high. At Tacoma, Wash., two dams for power development on the Nisqually River are

proposed. One is to be 300 ft. high, with a plant of 50,000 kw capacity. Below this will be the La-Grange dam, for 64,000 kw, serving 40 miles of transmission lines. Both are to be completed in 1944.

An example of smaller structures is the proposed dam of the Clam River Power Co. for storage and power, near Grantsburg, Wis. It is to be an earth dam 30 ft. high, with concrete spillway and power house. Part of the Jim Falls earth dam on the Chippewa River, in Wisconsin, was blown out during the September floods to prevent damage to the power plant by overflow, the spillway being inadequate to carry off the flood. At the Hales Bar dam on the Tennessee River, renewed efforts were made to check the leakage flow under the dam, through the seamy rock on which the dam was built. The first irrigation dam in the United States, built in 1871, in Utah, by the Newton Irrigation District, is to be superseded by the new and larger Newton dam of the Bureau of Reclamation, near Logan, Utah.

Two disputes over dam construction, both in Oklahoma, were settled in 1941. At the Demson dam, being built by the U.S. Engineers on the Red River (Texas-Oklahoma boundary), Governor Phillips, of Oklahoma, had attempted to stop work, as being an invasion of State rights. In March, 1941, he ordered the Federal engineers off the site, put State troops in charge, and sought an injunction to halt further work. A local Federal court denied his application. The U.S. Supreme Court upheld the decision, holding that Federal powers for flood control extend to the tributaries of a navigable stream. On the dispute between Governor Phillips and the Federal government over the Pensacola dam on the Grand River, an agreement was reached in 1941 by which the Governor revoked his order (March, 1940) putting State troops in charge: both parties dismissed their suits against each other, and the Federal government agreed to pay \$689,000 towards the cost of new roads replacing those submerged in the reservoir. Later, the Federal government took over the dam from the Grand River Dam Authority to prevent delay in the use of power, since the Authority was unable to raise funds for the necessary transmission lines.

Of foreign dams, a striking event was the destruction of the great Dnieper dam on the Dnieper River in Russia, by the Russian troops, in August, to check the advance of the German forces. This concrete dam, built in 1927-32 under the direction of American engineers, was 140 ft. high to the spillway crest, with regulating gates on the crest; there were three locks at the east end and a power house at the west end. In Mexico, the Angostura dam on the Yaqui River, completed late in 1940, is a concrete arched dam 291 ft. high, for irrigation. In Spain, a 10-year program for public works was promulgated, including river regulation by dams and other works for flood control, irrigation, and power development.

See AQUEDUCTS; FLOOD CONTROL; FOUNDATIONS; WATERWAYS. Also see illustrations facing p. 81.
E. E. RUSSELL TRATMAN.

DANISH LITERATURE. Judging from the available information, Denmark has not become a substantially less book-producing or book-reading nation under the severe exigencies of Nazi occupation than it was before. Danish publishers, forced to restrict themselves to "politically safe" ventures, however, have turned largely to matters as little controversial as possible. Little poetry has appeared. Among the older poets only Rørdam and Kai Hoffmann (*Dan-*

marks Rige) seem to have been active. The younger generation is represented most significantly by Piet Hein's capable *Vers i Verdensrummet* (*Verses in the Universe*) and Hulda Lutken's *Drømmen* (*The Dream*).

Though fiction has been written in fairly large quantities, no novel of first importance has appeared during the year. The most important novel from the older generation is Marie Bregendahl's posthumous, and unfinished, *Birgitte Borg*. Other novels are: Carlo Andersen's *To Aar er en Evighed* (*Two Years Are An Eternity*), an honest, tragic domestic tale; Karen Aabye's *Vi skal ikke ha' Penge tilbage* (*We Shall Not Get Money Back*); Steen Christensen's *Op med Ballonen* (*Up in the Balloon*), and Tove Ditlevsen's *Man gjorde et Barn Fortraed* (*Harm Done to a Child*). Palle Rosenkrantz (who died during the year) published *Rosenkrantz and Gyldenstjerne*, a rollicking historical romance about the adventures of two spirited Danish junkers in the Denmark of Christian IV. From both a literary and historical point of view probably the most important book that came out of Denmark in 1941 is the long awaited first volume of Johannes Jørgensen's *Den hellige Birgitte af Vadstena* (*Saint Birgitta of Vadstena*), a learned, reverent, and beautifully written biography, covering the years down to 1349, of the Swedish Saint.

ALRIK GUSTAFSON.

DANZIG. A territory including the Baltic port of Danzig at the mouth of the Vistula River, which was detached from Germany and constituted a Free City under the protection of the League of Nations by Article 102 of the Treaty of Versailles, effective Nov. 15, 1920. It was occupied by the German army and reincorporated as an integral part of the Reich at the outbreak of the German-Polish war on Sept. 1, 1939. Area of the Free City, 754 square miles; population (1939), 415,000 including 266,000 in the city of Danzig. Head of the civil administration, Albert Foerster, Nazi party leader in the district. For statistics and other data on Danzig previous to its reunion with Germany, see YEAR BOOK for 1939, p. 189.

DEAFNESS. See **PSYCHOLOGY** under *Employment Tests*.

DEATHS, DEATH RATES. See **ACCIDENTS; NECROLOGY; VITAL STATISTICS.** Compare also **MEDICINE AND SURGERY, PUBLIC HEALTH SERVICE, ETC.**

DEBTS, Public. See **MUNICIPAL GOVERNMENT; PUBLIC FINANCE; WAR DEBTS;** also, States and countries under *Finance*.

DEFENSE. See the topics listed under **NATIONAL DEFENSE.**

DEFENSE AID REPORTS, Division of. An agency of the United States government, established May 2, 1941, within the Office for Emergency Management to provide for the administration of the Lend-Lease Act; subsequently superseded by the Lend-Lease Administration (q.v.).

DEFENSE COMMUNICATIONS BOARD. Created by Executive Order of Sept. 24, 1940, the Defense Communications Board coordinates plans for utilizing and safeguarding the nation's electrical communications facilities under any emergency. Its unified blueprinting for defense communications takes cognizance of broadcast and other forms of radio transmission, as well as the older wire services, such as telephone, telegraph, and cable.

The board, which has no censorship or acquisition functions, reports to the President through the Office for Emergency Management. It is made up

of representatives of Federal departments and agencies primarily concerned with communications under war conditions. It is headed by James Lawrence Fly, who is also chairman of the Federal Communications Commission. Other members are Herbert E. Gaston, Maj. Gen. Dawson Olmstead, Rear Adm. Leigh Noyes, and Breckinridge Long. Without personnel of its own, the board is assisted by a coordinating committee and a law committee, both staffed by officials loaned by their respective agencies.

There are advisory committees representative of labor and industry, as well as committees which speak for domestic and international broadcasters; radiocommunications; cable, telegraph, and telephone; amateurs; aviation; state and municipal facilities, United States Government facilities, and the Interdepartment Radio Advisory Committee.

In addition, a special committee is studying material and equipment requirements for the wire and radio services to assist the Office of Production Management, while another liaison committee cooperates with the Office of Civilian Defense.

The various industry committees have formulated plans to meet any foreseeable contingency with respect to their individual fields in the overall precautionary picture. All are concerned with the maintenance of continuous service and providing supplemental or alternate facilities if needed. In particular, plans have been drafted for regional telephone networks, with a super linking of practically every broadcast station in the country. The broadcasters, in turn, are prepared to prevent their stations from being used as beacons for possible enemy aircraft. Alternate routes for international messages have been worked out, and arrangements made of cable and other repair work under war conditions. Attention has been given to expansion of police and fire communications systems, and defense communications are assured priority over all others.

In addition, the board has cooperated closely with the Federal Communications Commission in facilitating transfer of frequencies for military purposes, and in expediting completion of emergency communication links. Establishment by the Commission of the Foreign Broadcast Monitoring Service was upon special recommendation of the Defense Communications Board. This service is now actively translating, transcribing, analyzing, and reporting on from 600,000 to 900,000 words transmitted daily by foreign broadcast stations throughout the entire world as recorded by the Commission's National Defense Operations Section. (See also **RADIO**.) Working in three shifts of eight hours each, a special force of technicians, translators, analysts, and other experts is keeping abreast of all international broadcasts which emanate outside of this country, 24 hours of the day, 7 days a week. Speeches, newscasts, and entertainment are carefully watched for intelligence and trends, which are reported immediately to Government officials responsible for counter-propaganda or other action, if necessary. The importance of listening-in on foreign transmissions is attested in the fact that all propaganda instigated abroad almost invariably follows the example set in short-wave broadcasts. At the same time, a considerable amount of news and intelligence information comes over the short-wave which is not available from other sources. The German radio bombards the United States alone with nearly 11 hours of emissions daily, the British send us about 6½ hours, Japan 4½ hours, and Italy more than 4 hours, and a score of other nations in lesser proportions.

DEFENSE HEALTH AND WELFARE SERVICES, Office of. The Office of Defense Health and Welfare Services was established by Executive Order of the President on Sept. 3, 1941, under the Office for Emergency Management, superseding the Office of the Coordinator of Health, Welfare, and Related Defense Activities. The Federal Security Administrator, who had previously acted as Coordinator, was named Director. (The Administrator was designated as Coordinator of Health, Welfare, Medical, Nutrition, Recreation, and other related fields of activity affecting the national defense, on Nov. 28, 1940, by the Council of National Defense, with the approval of the President.)

This office serves as the center for coordination of health and welfare services available through Federal and other agencies, both public and private, to meet the needs of localities and of the entire Nation arising from the defense program. It carries out its responsibilities through direct operation in those areas in which no existing agency has had primary responsibility, and through committee organization which integrates planning and action in those areas in which other Federal agencies are operating.

As one of the first steps toward coordination, the Director arranged in January, 1941, for the appointment of an Interdepartmental Advisory Council, representing 20 Federal agencies working in the fields of health and welfare. As a further step, advisory committees, composed of specialists from public and private agencies, professional associations, and other interested groups have been established on Health and Medical Care, Family Security, Nutrition, Social Protection, and Community Organization.

Within the office there are two main functional subdivisions: The Division of Health and Welfare and the Division of Nutrition. In addition to its planning activities, the Division of Health and Welfare conducts its operations through the U.S. Public Health Service (q.v.), the Office of Education (q.v.), the Social Security Board (q.v.), and two newly created sections, Recreation and Social Protection. The field programs of the Office of Defense Health and Welfare Services are integrated through the Program Operation Branch. A Regional Advisory Council functions in each of the 12 geographical regions of the Social Security Board, with the Regional Director of the SSB as chairman. In May, 1941, the Director delegated to the Chief of the Children's Bureau (q.v.) the responsibility for developing comprehensive plans for assuring proper safeguards for children in the national defense program.

A survey of community needs and resources for health, education, recreation, and welfare was made to determine what aid was necessary to meet the defense impact. In dealing with community needs, this office has attempted first, to help the communities organize to help themselves; and second, to secure through Federal aid, needed facilities that cannot otherwise be provided.

The most pressing needs for community facilities are being met under Public Law 137, 77th Congress, authorizing provision of necessary facilities in communities substantially expanded by the national defense program. The facilities to be made available are primarily schools, waterworks, sewers, sewage disposal facilities, hospitals and health centers, and recreational facilities. The act is administered by the Federal Works Agency, but under a cooperative arrangement with it, projects in the fields of health, education, and recreation are submitted to the appropriate unit of the Fed-

eral Security Agency for review and suggestions.

The *Committee on Community Organization* was established in September, 1941, to render advice with respect to organizing local communities in matters pertaining to these fields.

The functions of the *Health and Medical Committee*, originally created by an order of the Council of National Defense in September, 1940, are to coordinate all health and medical programs affecting the national defense, to make studies of defense health and medical problems, and to assist the Director in mobilizing the health and medical resources of the Nation. Subcommittees have been established for (1) Medical Education, (2) Hospitals, (3) Dentistry, (4) Nursing, (5) Industrial Health and Medicine, and (6) Negro Health.

The Federal Security Administrator authorized the creation of a *Family Security Committee* on Feb. 12, 1941, to act in an advisory capacity, review existing resources, plan coordination of services, etc.

Recognizing the importance of recreation to defense, and since no existing Federal agency had permanent responsibility for recreational activities on a nation-wide scale, the Director established, in January, 1941, a *Recreation Section*. It seeks to stimulate and coordinate recreational programs in communities adjacent to Army, Navy, and defense industrial centers. Defense recreation committees have been organized in the various localities to develop local recreation programs. Recreation facilities, especially service centers, are provided locally insofar as possible. Others will be built by Federal funds, where necessary. An agreement has been made with the United Service Organizations (see SOCIETIES) whereby the USO will operate recreation buildings built and equipped by the Federal Government. As of September, 1941, 165 service centers in various communities were in operation.

The *Social Protection Section* was established in the spring of 1941 to safeguard the armed forces on leave and the civilian population from the hazards of commercialized vice.

The *Nutrition Division* has as its chief function the organization of a nation-wide educational program for better nutrition. It works closely with the National Nutrition Advisory Committee which is composed of representatives from the various Federal agencies concerned with nutrition programs and of representatives of several professional organizations concerned with nutrition as technical advisory groups. The National Research Council appointed two subcommittees, on Food and Nutrition and on Food Habits. Recommended Dietary Allowances for specific nutrients were formulated by the Food and Nutrition Committee. State nutrition committees are functioning in every State, and in more than half the States are already organized on a county basis. The local programs stress an adequate school lunch, adult education in nutrition and food selection, more home-produced food, use of whole wheat or enriched flour and bread, and low-cost milk for needy families. See MEDICINE AND SURGERY.

PAUL V. McNUTT.

DEFENSE HOUSING COORDINATION, Division of. See ARCHITECTURE under *Defense Housing*. Compare also HOUSING.

DEFENSE SAVINGS BONDS AND STAMPS. See PUBLIC FINANCE.

DEFENSE SUPPLIES CORPORATION. See UNITED STATES under *Foreign Affairs*. For a description, see YEAR BOOK for 1940, p. 650.

DEFENSE TRAINING. See CIVILIAN CONSERVATION CORPS; EDUCATION; LABOR CONDITIONS under *Employment*; LIBRARY PROGRESS; PRODUCTION MANAGEMENT; OFFICE OF; SOCIAL SECURITY BOARD; WOMEN'S BUREAU; WORK PROJECTS ADMINISTRATION; YOUTH MOVEMENT.

DEFENSE TRANSPORTATION, Office of. With the stated object of assuring maximum utilization of the domestic transportation facilities of the nation for the successful prosecution of the war, the Office of Defense Transportation was created by executive order of the President Dec. 18, 1941, in the Office for Emergency Management of the Executive Office of the President. The Office superseded the Transportation Division (q.v.) of the former Advisory Commission to the Council of National Defense. The term "domestic transportation" as here used includes railroad, motor, inland waterway, pipe line, air transport, and coastwise and intercoastal shipping.

The duties of the Office are to coordinate the transportation policies and activities of the several Federal agencies and private transportation groups to facilitate prosecution of the war; to take necessary steps to assure a domestic transportation system adequate to handle the increased traffic occasioned by the war effort, to coordinate and direct traffic movements so as to prevent transportation congestion; to coordinate domestic traffic movements with ocean shipping; to perform certain statutory functions relating to railroad transportation vested in the President; to take steps to promote increased storage, loading, and unloading facilities where necessary; to represent the defense interest of the Government in negotiating rates with carriers, to advise upon emergency legislation affecting domestic transportation or recommend such legislation.

Joseph B. Eastman, Chairman of the Interstate Commerce Commission, was appointed Director of the Office of Defense Transportation with authority to appoint heads of staff divisions, subject to the approval of the President. The executive order provides that the office shall maintain close liaison with the U.S. Maritime Commission and the Interstate Commerce Commission as to problems related to the jurisdiction of those commissions and to maintain formal liaison also with various other governmental agencies to facilitate unity of policy and action and the use of existing governmental services.

DELAWARE. A south Atlantic State. Area: 2,057 sq. mi., including 79 sq. mi. of inland water, but excluding part of Delaware Bay, 350 sq. mi. Population: (1940 census) 266,505. The urban population comprises 52.3 per cent of the total (U.S. average, 56.5 per cent); non-white population, 13.4 per cent (U.S. average, 10.2); elderly (65 years and over), 7.8 per cent. Delaware ranks 47th among the States in area, 46th in population, and 10th in density, with an average of 134.7 persons per square mile. The capital is Dover with 5,517 inhabitants; largest city, Wilmington, 112,504. There are three counties and one city of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to H. V. Holloway, Superintendent of the Department of Education, there were 43,948 pupils enrolled in the public schools of Delaware during the school year 1940-41, 25,992 in elementary schools and 17,956 in secondary schools. Teachers numbered 1,587 and received an annual average salary of \$1,628. Total expenditures

for the year were \$4,467,730.71 current, total \$4,917,133.34. For higher education, see *Delaware* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 3,894, of which 2,054 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 72,973; 60,209 were private and commercial automobiles, and 11,554 trucks and tractor trucks. Gross motor-fuel consumption was 63,920,000 gallons. Net motor-fuel tax receipts were \$2,325,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$1,252,000.

Railways of all classes extended 297 miles (Dec. 31, 1939) .13 per cent of the total mileage in the United States. Class I steam railways reported 717,809 tons of revenue freight originating in Delaware in 1940 and 2,216,499 tons terminating in Delaware. There are nine airports and landing fields in the State (one lighted field). On July 1, 1941, according to the Civil Aeronautics Authority, there were 123 civil aircraft in the State and 211 commercial and private pilots (177 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 348,900, as compared with 355,300 acres in 1940. According to the latest census, there are 8,994 farms, valued at \$54,898,828, averaging 99.6 acres each. Farm population numbered 45,724 or 17.2 per cent of the total.

Manufacturing. According to the 1939 Census of Manufactures, there were 429 manufacturing establishments in Delaware, employing 20,393 wage earners who received \$21,959,627 in wages for the year. Total value of products was \$114,753,652; value added by manufacture, \$55,183,179.

Mineral Production. Value of mineral production totals less than a half million dollars annually according to the latest figures of the U.S. Bureau of Mines.

Trade. According to the 1940 census there were 316 wholesale establishments in Delaware, employing 2,946 persons, reporting net sales for 1939 of \$157,474,000 and annual pay roll of \$6,018,000. There were 4,544 retail stores with 10,972 employees, reporting sales of \$110,052,000 and pay roll of \$11,168,000. Service establishments numbered 1,444, employing 1,977 persons for \$1,799,000 per year, and reporting a business volume amounting to \$6,758,000. The leading business center of the State is Wilmington which reported wholesale sales of \$135,640,000, retail sales of \$64,951,000. New Castle County, including the city of Wilmington, is the leading county in the State in the receipts for its service establishments (\$5,541,000).

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Delaware was \$3,164,000. Under the Social Security program, financed by Federal funds matching State grants, 2,507 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$11.61 (U.S. average pension, \$21.08), and 1,735 dependent children in 624 families received average monthly payments of \$34.89 per family (U.S. average, \$32.73). General relief cases, which are supported by State and local funds only, numbered 951 and received \$19.75 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 151 (\$10,000); NYA student work program, 454 (\$2,000); NYA out-of-school work program, 881 (\$16,000); WPA,

1,959 (\$129,000); regular Federal construction projects, 2,864 (\$274,000).

Legislation. The General Assembly convenes in regular session on the first Tuesday of January in odd years. It is composed of 17 Senators (7 Democrats and 10 Republicans in 1941) and 35 Representatives (14 Democrats and 21 Republicans). The following summary of legislation enacted in 1941 was prepared for the YEAR BOOK through the courtesy of the *Wilmington News-Journal*.

"The most notable act of the 1941 Delaware Legislature, perhaps, was repeal of the "Blue Laws" which from colonial days had prohibited all but "necessary" work on Sundays

"The session also enacted legislation creating a system of permanent registration for motor vehicles, the dates of the tags to be changed annually; authorizing a \$1,165,000 bond issue for a State-wide building program, creating a State Council of Defense; appropriating \$750,000 for emergency use in connection with defense or damage from storm or otherwise, to public roads, bridges, and other property; revoking the charter of the town of St. Georges, at the request of the town's officials; to create an agricultural station in Sussex County as a branch of the University of Delaware Department of Agriculture; proposing amendments to the State constitution fixing the pay of members of the Legislature on a new basis and restricting the number of legislative employees, also regulating absentee voting at elections (which will be effective only if passed at the next session also); providing for the settlement of disputes with other States with respect to domiciliary death taxes, regulating the licensing of nonresident contractors doing work in Delaware; authorizing formation and maintenance of a State guard; authorizing New Castle County to borrow \$750,000 for its part of the expense of an airport, and Kent County to borrow \$25,000 for the same purpose; creating a permanent plan for the registration of voters, creating departments of elections for Kent and Sussex Counties, similar to that already in existence in New Castle County, providing for two ballots at presidential elections, one containing the names of the presidential nominees and the other those of nominees for State and local offices; amending the General Corporation Law in certain particulars; creating a new teachers' pension plan for Wilmington; regulating the manufacture, sale, and use of explosives in the State; regulating fees and taxes in connection with horse racing in Delaware; revamping the Regional Planning Commission of New Castle County and increasing its authority; extending the provisions for payments under the State workmen's compensation law; regulating the importation, sale, and transportation of alcoholic liquors; enlarging the power of the Unemployment Compensation Commission in the matter of making reciprocal arrangements with other States to protect the benefits of workers who work in more than one State; providing Delaware representation in the Atlantic States Marine Fisheries Compact; providing for the registration of professional engineers and land surveyors." See LABOR LEGISLATION.

Finances. Total tax collections in Delaware for the fiscal year ending in June, 1941, were \$13,069,000 (1940: \$13,169,000). Total sales taxes amounted to \$3,185,000, including motor fuel, \$2,494,000. Taxes on specific businesses came to \$4,377,000, while unemployment compensation ran to \$2,441,000. The net income taxes were \$1,556,000. Cost payments for the operation of general government totaled \$10,855,000 in 1939, the latest year available. (Revenues for the general government for

that year were \$15,410,000.) Cost of operation per capita was \$41.27. Total gross debt outstanding in 1941 was \$4,195,000, as compared with \$3,216,000 in 1932.

Officers and Judiciary. The Governor is Walter W. Bacon (Rep.), inaugurated in January, 1941, for a four-year term; Lieutenant Governor, Isaac J. MacCollum; Secretary of State, Earle D. Willey; Attorney General, James R. Morford; State Treasurer, Peter S. Collins; State Auditor, Harrison M. Manning. Chief Justice of the Delaware Supreme Court is Daniel J. Layton, Chancellor is Josiah O. Wolcott; there are four associate members appointed for 12-year terms.

DEMOCRATIC PARTY. On Jan. 1, 1941, the Democratic National Committee, National Headquarters for the Democratic Party, was installed in new offices in the Mayflower Hotel in Washington from the old headquarters in the National Press Building

Franklin D. Roosevelt was inaugurated President of the United States, on January 20, for a precedent-breaking third term. Earlier Henry A. Wallace was sworn in as Vice President by John N. Garner, who was Vice President during the first two terms under President Roosevelt. Later in the day, from the White House, the President reviewed a military parade of mechanized troops as well as cavalry and infantry down Pennsylvania Avenue. Approximately 400,000 persons reviewed the spectacle

The annual Jackson Day dinner was held on March 29 instead of January 8, so as not to conflict with the Inaugural program of the President. Jackson Day is the anniversary of the Battle of New Orleans. On this day the members of the Democratic Party honor the memory of the victor of that battle—Andrew Jackson. While Jackson Day dinners were held in all localities throughout the United States, the principal dinner in Washington was suspended because of a grave crisis arising for America out of the European War. The President, however, made his customary address, which was broadcast from the presidential yacht "Potomac" in Port Everglades, Florida, to the Nation as well as to Jackson Day dinners throughout the country.

Naturally, in off years political activities are somewhat curtailed and there is not such activity as during the years in which Congressional and Presidential Elections are held. Officers of the Democratic Committee as of December, 1941, were: Hon. Edward J. Flynn, Chairman; Mrs. Charles W. Tillett and Hon. Oscar R. Ewing, Assistant Chairman; Hon. Richard J. Reynolds, Treasurer; Hon. Charles Michelson, Director of Publicity; Hon. Edwin A. Halsey, Sergeant-at-Arms.

DEMOLITION BOMBS. See BOMBS

DENMARK. A formerly independent kingdom of northwestern Europe, occupied by German armed forces on Apr. 9, 1940. It comprises the peninsula of Jutland, the two main islands of Zealand and Funen, and about 200 smaller adjacent islands in the Baltic. The Faroe Islands (q.v.), an integral part of the kingdom, were occupied by British troops on Apr. 13, 1940, pending the outcome of the European War. Greenland (q.v.), a Danish dependency, remained under the control of the local Danish administration but direct contact with the Copenhagen Government was severed when the German occupation of Denmark took place. The King of Denmark was also King of Iceland, al-

though the Icelandic Althing (parliament) on May 16, 1941, voted to terminate this personal union at the end of the European War and appointed a regent during the interim (see ICELAND under *History*). Capital of Denmark, Copenhagen (København). King, Christian X, who succeeded to the throne May 14, 1912.

Area and Population. Area, excluding the outlying possessions, 16,576 square miles. Estimated population on Jan. 1, 1940, 3,825,000. American citizens living in Denmark on Jan. 1, 1941, numbered 895. Living births in 1939 numbered 67,914 (17.8 per 1,000); deaths, 38,535 (10.1); marriages in 1938 totaled 33,624 (8.9). Populations of the chief cities at the 1935 census were: Copenhagen, 843,168; Aarhus, 90,898; Odense, 76,116; Aalborg, 48,132.

Education and Religion. There is no illiteracy. The 4,472 lower schools had 480,000 pupils on Jan. 1, 1938; secondary, professional, and vocational schools, 74,100; the two universities at Copenhagen and Aarhus, 5,700. The 1921 census showed 3,221,843 Protestants, 22,137 Roman Catholics, 5,947 Jews.

Production. Previous to the German occupation, 35 per cent of the working population was engaged in agriculture and dairying and 33 per cent in industry. Commerce and fishing were the other leading occupations. Livestock estimates as of November, 1940, with figures for July, 1939, in parentheses, show the effects of the German occupation upon Denmark's most important industry: Cattle, 2,976,000 (3,271,000); swine, 2,528,000 (3,182,000); chickens, 11,260,000 (33,296,000). Further drastic reductions in the livestock population occurred during 1941.

Foreign Trade. After Apr. 9, 1940, Denmark's foreign trade was monopolized largely by Germany and was conducted on a clearing-account instead of a free-exchange basis. Imports in 1940 were reported at 1,373,870,000 Danish crowns (1,740,300,000 in 1939) and exports at 1,507,500,000 crowns (1,578,000,000 in 1939). The 1940 excess of exports over imports (133,630,000 crowns) was unprecedented in Danish foreign trade. Of the 1940 exports, agricultural products totaled 1,206,500,000 crowns (1,147,600,000 in 1939) and manufactured products 232,100,000 crowns (360,400,000). The number of live pigs exported rose from 136,800 in 1939 to 754,000 in 1940, while exports of bacon, butter and eggs declined. In 1939, the United Kingdom was Denmark's chief customer and source of supply. See *HISTORY*.

Finance. The Danish Government reported an ordinary budget surplus of 23,500,000 crowns for the fiscal year ended Mar. 31, 1939, and a surplus of 9,300,000 crowns for 1939-40. It estimated that there would be deficits of 48,700,000 crowns for 1940-41 and 66,700,000 crowns for 1941-42. This excluded the cost of the German army of occupation, estimated at over 500,000,000 crowns annually, which was met by the Danish National Bank. Budget estimates for 1940-41: Ordinary receipts, 644,700,000 crowns; expenditures, 693,100,000 crowns. Preliminary estimates for 1941-42: Ordinary receipts, 522,300,000 crowns; expenditures, 589,000,000 crowns. Public debt on Mar. 31, 1939, 1,229,141,000 crowns. At the official exchange rate (5.18 crowns = \$1) in 1941, the crown was equivalent to \$0.1931 (\$0.2035 in 1939).

Transportation. In 1940 Denmark had 3,189 miles of railway line (1,625 miles state-owned); 32,212 miles of highways; and air lines which carried 71,750 passengers in 1939. Lack of fuel curtailed virtually all forms of transportation. Shipping tonnage entering Danish ports in 1940 declined 70 per

cent from the 1939 level; in 1939, 23,744 ships of 7,600,000 tons entered Copenhagen harbor alone. Following the German occupation of Denmark, two-thirds of all Danish ocean-going ships were taken over by the belligerents or held in neutral ports. The government assumed control of most of the usable tonnage remaining in Denmark's jurisdiction to regulate trade with Baltic, South Norway, and Western German ports. Earnings of the merchant marine for 1940 showed a drastic decline from the 1939 level.

Government. The Constitution of June 5, 1915, as amended Sept. 10, 1920, vests executive power in the King acting through a cabinet responsible to the Rigsdag (Parliament). Legislative power rests jointly in the King and Rigsdag. The Folketing (lower chamber of the Rigsdag) consists of 149 members elected for four years by proportional representation. The Landsting (upper chamber) comprises 76 members serving for eight years; 19 members are elected by the Landsting itself and every four years half the remainder is elected indirectly by voters of over 35 years. Premier in 1941, Thorvald A. M. Stauning (Social Democrat), heading a coalition government of the Social Democratic, Radical, Liberal, and Conservative parties, formed July 8, 1940. These four parties and the Justice League, controlling 137 out of the 149 seats in the Folketing, on July 3, 1940, formally agreed "to abandon all points of disagreement and unite to make sure the independence and integrity promised our country."

HISTORY

Internal Developments. The year 1941 was marked by the progressive extension of German control over the kingdom's internal as well as foreign affairs, despite the pledges given at the time of the military occupation in 1940 (see *YEAR BOOK* for 1940, p. 183). The Danish Government gave way step by step under Berlin's pressure, accepting Denmark's assigned role in the German "new order" in Europe. The bulk of the Danish people, however, apparently viewed this process with growing resentment, and rallied behind King Christian in passive, and sometimes active, resistance to the German protectorate.

On January 28 Lieut. Col. T. P. A. Oerum, who resigned as technical chief of the Danish Air Force upon the Nazi occupation, was sentenced to life imprisonment for espionage in Germany on behalf of a foreign power. Three other members of the Danish Air Force were sentenced to long prison terms on the same charge. In announcing the sentences, the Danish Ministry of Justice issued an official warning to the nation to refrain from anti-German activities.

The active leadership in mobilizing Danish opinion against continued German rule was taken by J. C. Moeller, chairman of the Conservative party. Resigning (under German pressure) his post as Minister of Commerce in 1940 and his seat in Parliament early in 1941, Moeller spent more than three months during the winter of 1940-41 in a speaking tour of the country. The anti-German sentiment demonstrated at his meetings and similar manifestations elsewhere led the Gestapo to curb his activities. At the same time the German Minister demanded the resignation of the Stauning Government and the establishment of a frankly pro-Nazi regime. King Christian reportedly reminded the Minister of the German pledge not to interfere in Danish internal affairs. The failure of the Danish Nazi party under Dr. Fritz Clausen to win popular support also helped to balk the Ger-

man plan. Later the Danish Nazis split into a number of warring factions. On February 15 the Copenhagen authorities postponed municipal elections for one year because of the danger of fighting between pro-Nazi and anti-Nazi elements.

After repeated efforts to obtain 10 Danish naval torpedo boats, Berlin in January demanded their delivery on pain of severe reprisals. The Danes yielded under protest on February 6. Premier Stauning on March 9 urged the necessity for Denmark to adjust itself to a German-controlled Europe. He stated that the Reich had consumed Denmark's agricultural surpluses without supplying the quantities of raw materials and fuels normally received for these products. In consequence "large quantities" of livestock had to be slaughtered for lack of feedstuffs. Nevertheless he expressed belief that the German program for a planned European economy "surely involved advantages when compared with the previous system."

On April 7, two days before the first anniversary of the German occupation, the Danish Government appealed to the nation to avoid anti-German demonstrations. However on June 10 the Ministry of Justice, referring to demonstrations against German troops by "irresponsible persons," warned that future acts of this nature would be punished by increased fines or prison terms up to two years.

Drive on Communism. Coincident with the German attack on Russia June 22 the German secret police, aided by Danish police, raided the Soviet Legation and consular offices in Denmark and rounded up 269 alleged Danish Communists. All except 166 of those arrested were later released. Among those imprisoned were three Communist members of the Folketing, which on September 3 voted to cancel the legislative immunity of the Communists in order to legalize their imprisonment. A bill to outlaw the Communist party was introduced in Parliament August 20. Seven Danish Communists were sentenced to long prison terms on sabotage charges July 7.

The subservience of the Copenhagen authorities to Berlin was further indicated on June 27 when Denmark severed diplomatic relations with the Soviet Union and authorized the recruiting of Danish volunteers for service with the Finnish-German armies against the Russians. On August 18 the Danish Government granted diplomatic recognition to the Japanese-controlled Nanking regime as the "national Government of China." Eric Scavenius, pro-Nazi Danish Foreign Minister, affixed Denmark's signature to the anti-Comintern Pact in Berlin November 25 (see GERMANY under *History*). His action, allegedly endorsed by the King and Government under strong German pressure, provoked spontaneous protest demonstrations in Copenhagen on November 26, according to Swedish correspondents. The police were said to have fired on the demonstrators.

Relations with United States. The subservience of the Stauning Government to Berlin adversely affected Danish interests in many parts of the anti-German world. The U.S. Government on March 30 took "protective custody" of 39 Danish ships tied up in American ports. Despite a reported protest from Copenhagen, these vessels were taken over permanently by the U.S. Maritime Commission beginning in June. Compensation was paid to the Danish owners. Chile had requisitioned three Danish ships in the port of Talcahuano February 17. After the United States acted, a number of other Latin American governments followed suit. Official protests from Copenhagen were rejected.

German activities in Greenland led to the signing

by the United States Government and the Danish Minister in Washington on Apr. 9, 1941, of an agreement making Greenland a protectorate of the United States for the duration of the European War (see GREENLAND under *History*). The Danish Minister, Henrik de Kauffmann, informed his Government of the agreement for the first time on April 11, the day after its announcement in Washington. He stated that he had acted "on behalf of His Majesty the King of Denmark in his capacity as sovereign of Greenland, whose authorities in Greenland have concurred. . . ." Requesting that "judgment of my decision be withheld until Denmark again is free," the Minister said that he had taken "this unusual step" in the best interests of both Denmark and Greenland.

The Copenhagen Government on April 12 declared the Washington agreement void and recalled Minister de Kauffmann from his post. The Minister on April 13 notified Secretary of State Hull that this action had been taken by the Copenhagen authorities under duress and that he therefore considered it invalid. He announced his determination "to carry on the work that was entrusted to me when I was appointed Danish Minister to Washington by a free Danish Government. . . ." This decision, he asserted, had the full support of all the other members of the Danish Foreign Service stationed in the United States. Secretary Hull replied that the U.S. Government "considers it to be a fact that the Government in Denmark in this respect is acting under duress." Consequently Washington continued to recognize de Kauffmann as the duly authorized Minister of Denmark.

The Danish Government on April 16 adopted a resolution ousting de Kauffmann from his Washington post and accusing him of treason and violation of an espionage law passed in January at German instigation. Meanwhile a split developed in the ranks of the Danish diplomatic and consular service in the United States. Einar Blechingberg, consul of the Washington Legation, and two vice consuls in New York repudiated de Kauffmann's stand, while the rest of the diplomatic and consular staffs supported the Minister. The Danish Foreign Office on May 15 announced the dismissal of Consuls General Reimund Baumann in Chicago, Georg Bech in New York, and A. C. F. Sporn-Fiedler in San Francisco. With the support of Minister de Kauffmann, the consuls ignored the dismissal order and continued their duties. The U.S. Government, on the other hand, withdrew recognition from the dissenting counselor of the Danish Legation and the two New York vice consuls. They were obliged to discontinue their official activities on threat of deportation. On July 3 the Stauning Government asked the United States to withdraw its consular officials from Denmark and this was done before July 15.

"Free Denmark" Movement. The Danish National Council, established in London in September, 1940, to win British support for the restoration of Danish independence, became increasingly critical of the Stauning Government's policies. It sponsored the formation of a small unit of Danish soldiers in the British armed forces and assumed responsibility for the interests of some 5,000 Danish seamen sailing under the British flag. To rally Danes and Danish sympathizers behind their movement, the Danish National Council in 1941 sent a mission on a two-months' tour of the United States, Canada, and South America. A United States branch of the Council was established in New York in September.

The Danish National Council and the Danish

press in the United States approved the stand taken by Minister de Kauffmann in Washington regarding Greenland. They also strongly supported the action of the United States in taking Iceland under its protection. See ICELAND under *History*. Count Eduard Reventlow, Danish Minister to Great Britain, repudiated the Copenhagen Government on December 2 because of its adherence to the anti-Comintern Pact. He announced that he would continue to maintain "a free Denmark's diplomatic relations with the British Government."

Economic Conditions. The economic situation became worse during 1941 after a sharp slump in 1940. The Danish Statistical Department on Aug. 12, 1941, reported that during 1940 the value of the kingdom's agricultural resources (animals, raw material stores, crops, etc.) declined by 600,000,000 crowns. Imports decreased by 395,000,000 crowns, exports by 93,000,000, freight and shipping returns by 97,000,000, the profits from foreign ships calling at Danish ports by 50,000,000 crowns. On the other hand the sums owed Denmark and its citizens abroad (chiefly by Germany) increased by 882,000,000 crowns to a total of 1,664,000,000 crowns.

The winter months of 1941 were made difficult by an acute fuel shortage and the more strict rationing of food. Government price control measures failed to check climbing prices and in March an average wage increase of 8 per cent was granted 400,000 civil servants and other workers. The *New York Times* of October 5 reported that the price index for Danish agricultural products had risen 76 per cent, for imported commodities 107 per cent, and for wages 19 per cent. The official Danish statistics showed a decline in the number of registered unemployed from 34,800 in January, 1941, to 11,300 at the end of May. Yet a state loan of 250,000,000 crowns, the largest in the kingdom's history, was offered for public subscription September 20 to finance public works for unemployment relief.

See ARCHITECTURE; CHILE under *History*; FASCISM; LABOR CONDITIONS; LIVESTOCK; WORLD WAR.

DENTISTRY. Dentistry and the Armed Services. For the professional care of an army of 1,400,000 there are required 2,100 dental surgeons (dentists) (*Jour. Dental Ed.*, June 27). If this army is doubled or tripled it will require approximately 2,000 dentists for each multiple, or about 1,500 for each increase of one million in the personnel of the armed forces. These needs cannot be satisfied by the absorption of the total number of recent graduates of the dental schools and those of the immediate future. The deficit is being and will be made up by withdrawal of considerable numbers of dentists from private practice, thereby further reducing the diminishing supply of recent years.

Reduction of the civil population as the result of the increase in the armed forces does not materially decrease the work of the civilian dentist. This is borne out by the relatively high percentage of rejections of candidates for selective service. Rejections due to dental defects run as high as 22 per cent and generally no lower than 15 per cent of those examined. According to an analysis of this situation (*U.S. Public Health Reports*, 56:1369-1387, July, 1941), for each man aged 21 to 35 years in the group rejected for dental reasons there are 22 permanent teeth out of his total complement of 32 that have been attacked by dental decay. Of these 22 teeth, 13 have already been extracted by the time the candidate is examined, many long before. Of the remaining decayed teeth

still in place, two are so badly decayed that they must be extracted, two have fillings in them, and five require immediate filling to save them. This analysis covers only the decay phase of dental disease, although it represents most of it. Obviously one of the important duties of the civilian dentist is to repair or replace the ravages of dental decay in the mouths of those otherwise eligible for service as well as of those approaching the minimum age for induction.

The author of this study concludes that "the prompt placement of fillings during school attendance would have prevented a large share of the tooth loss observed in the men [as noted above]. Although knowledge is not sufficient for the prevention of the initiation of caries [decay of teeth], the procedures of dentistry [suitable fillings] are sufficient to prevent dental rejectability even in persons having marked caries susceptibility [rampant tooth decay]." If to this systematic plan is added the effect of the advice and counsel of the practicing dentist with respect to the care of the teeth from the sixth year on, without doubt even more teeth can be saved.

Dental Education. Between 1,600 and 1,650 dentists were added to the profession in the United States in 1941, and these were recruited from the smallest group of graduates of the dental schools since 1920. There is no promise that the yearly additions will be any greater until the class admitted in the fall of 1941 finishes school. In contrast with this is the estimate that the annual loss of dentists is about 2,250. Therefore, for a number of years there has been a steady decrease at the rate of about 500 a year. In medicine, however, the number of graduates annually exceeds the losses by retirement and death and the facilities of the schools are crowded to the limit.

Nine students constitute the first class registered by the Harvard School of Dental Medicine for the new combined five-year course. No first year students were accepted for the former conventional course, but the enrollment of the 108 members of the three upper classes was continued, so that these students will be able to complete this course of study before it is finally abandoned by Harvard. The University of Louisville has approved a new curriculum for its School of Dentistry to be put into effect soon. Admission requirements and the first two years are to be identical for the courses in dentistry and medicine, credits in the first two years are to be interchangeable.

Dental Caries. Studies of the comparative incidence of dental decay in eight urban populations of suburban Chicago by a group from the National Institute of Health tend to confirm previous reports of the inhibiting effect on dental decay of minute amounts of fluorine in the city water supplies. Study groups were made up of white children, 12 to 14 years of age, in 7th, 8th, and 9th grades, who had been continuously in residence in the same community. The most pertinent finding was that water supplies with a fluoride content just below that capable of causing mottled enamel were associated with an unusually low caries experience. This was particularly striking in the instances of Oak Park and Aurora, the former using water obtained from Lake Michigan containing no fluoride and the latter using an artesian water with about 1.2 parts of fluoride per million parts of water; the Aurora children have a much lower amount of dental decay than those in Oak Park. These studies are but a part of the research work that is gradually bringing nearer a practical plan for the prevention of dental decay.

Progress was made in other fields of research and practice but largely along lines developed in previous years. See NATIONAL BUREAU OF STANDARDS.

EDWARD H. HATTON.

DEPARTMENT STORES. See ARCHITECTURE. For sales, see BUSINESS REVIEW under *Wholesale and Retail Trade*; MARKETING.

DEPORTATIONS. See IMMIGRATION, EMIGRATION, AND NATURALIZATION; UNITED STATES under *Civil Liberties*. For Bridges Case, see COMMUNISM.

DEPOSITS. See at the beginning of the article on BANKS and BANKING.

DESIGN, National Academy of. See ACADEMY OF DESIGN.

DETROIT. See PLANNING.

DEVIL'S ISLAND. See PRISONS.

DIES COMMITTEE. See COMMUNISM; FASCISM; UNITED STATES under *Congressional Investigations*.

DIET. See topics listed under NUTRITION.

DIPHTHERIA. See BIOLOGICAL CHEMISTRY under *Miscellaneous*.

DIPLOMATIC REPRESENTATIVES BETWEEN THE UNITED STATES AND FOREIGN COUNTRIES, 1941

Country	To the United States	From the United States
Afghanistan	(a)	Louis G. Dreyfus, Jr. (E) ^b
Argentina	Don Felipe A. Espil (A)	Norman Armour (A)
Australia	Richard G. Casey (E)	Nelson T. Johnson (E)
Belgium	Count Robert van der Straten-Ponthoz (A)	Anthony J. Drexel Biddle, Jr. (A) ^c
Bolivia	Don Luis Fernando Guachalla (E)	Douglas Jenkins (E)
Brazil	Carlos Martins (A)	Jefferson Caffery (A)
Bulgaria	(d)	(d)
Canada	Leighton McCarthy (E)	Jay Pierrepoint Moffat (E)
Chile	Don Rodolfo Michels (A)	Claude G. Bowers (A)
China	Hu Shih (A)	Clarence E. Gauss (A)
Colombia	Gabriel Turbay (A)	Spruille Braden (A)
Costa Rica	Don Luis Fernández (E)	Arthur Bliss Lane (E)
Cuba	Aurelio F. Conchoso (A)	George S. Messersmith (A)
Czechoslovakia	Vladimir Hurban (E)	Anthony J. Drexel Biddle, Jr. (E) ^c
Denmark	Henrik de Kauffmann (E)	Ray Atherton (E) ^d
Dominican Republic	J. M. Troncoso (E)	Robert M. Scotten (E)
Ecuador	Capitán Colón Eloy Alfaro (A)	Boaz Long (E)
Egypt	Mahmoud Hassan Bey (E)	Alexander C. Kirk (E) ^e
El Salvador	Don Hector David Castro (E)	Robert Frazer (E)
Estonia	Johannes Kaiv (C) ^f	(g)
Finland	Hjalmar J. Procopé (E)	H. F. Arthur Schoenfeld (E)
France	Gaston Henry-Haye (A)	Admiral William D. Leahy (A)
Germany	(h)	(h)
Great Britain	Viscount Halifax (A)	John G. Winant (A)
Greece	Cimon P. Diamantopoulos (E)	Anthony J. Drexel Biddle, Jr. (E) ^c
Guatemala	Don Adrian Recinos (E)	Fay A. Des Portas (E)
Haiti	Fernand Dennis (E)	John Campbell White (E)
Honduras	Don Julian R. Caceres (E)	John D. Erwin (E)
Hungary	(i)	(i)
Iran	Mohammed Schayesteh	Louis G. Dreyfus, Jr. (E) ^b
Iraq		Paul Knabenshue (C)
Ireland	Robert Brennan (E)	David Gray (E)
Italy	(j)	(j)
Japan	(k)	(k)
Latvia	Alfred Bilmanis (E)	(l)
Liberia		Lester A. Walton (E)
Lithuania	Povilas Žadeckis (E)	(m)
Mexico	Don Francisco Castillo Nájera (A)	(n)
Netherlands	A. Loudon (E)	Anthony J. Drexel Biddle, Jr. (E) ^c
Nicaragua	Don Leon De Bayle (E)	Pierre de L. Boal (E)
Norway	Wilhelm Munthe de Morgenstierne (E)	Anthony J. Drexel Biddle, Jr. (E) ^c
Panama	Don Ernesto Jaén Guardia (A)	Edwin C. Wilson (A)
Paraguay	Don Juan José Soler (E)	Wesley Frost (E)
Peru	Don Manuel de Freyre y Santander (A)	R. Henry Norweb (A)
Poland	Jan Ciechanowski (A)	Anthony J. Drexel Biddle, Jr. (A)
Portugal	João Antonio de Bianchi (E)	Bert Fish (E)
Rumania	(o)	(o)
Saudi Arabia		Alexander C. Kirk (E) ^e
Spain	Don Juan Francisco de Cárdenas (A)	Alexander W. Weddell (A)
Sweden	W. Boström (E)	Herchel O. Johnson (E)
Switzerland	Charles Bruggmann (E)	Leland Harrison (E)
Thailand (Siam)	Mom Rajawongse Seni Pramoj (E)	Willys R. Peck (E)
Turkey	Mehmet Münir Erteğün (A)	John Van A. MacMurray (A)
Union of South Africa	Ralph William Cloose (E)	Leo J. Keena (E)
U.S.S.R.	Maxim Litvinoff (A)	Laurence A. Steinhardt (A)
Uruguay	Juan Carlos Blanco (A)	William Dawson (A)
Venezuela	Don Diogenes Escalante (A)	Frank P. Corriean (A)
Yugoslavia	Constantin Fotitch (E)	Anthony J. Drexel Biddle, Jr. (E) ^c

^a The embassy and consulates of the Republic of Turkey in the United States are charged with the protection of Afghan interests in the United States. ^b Accredited also to Iran; resident at Tehran, Iran. ^c Accredited to the Governments of Belgium, Czechoslovakia, Greece, Netherlands, Norway, Poland, and Yugoslavia, established in England. ^d State of war declared by Bulgaria, Dec. 13, 1941. ^e Now in the United States on consultation. ^f Accredited also to Saudi Arabia; resident at Cairo. ^g Acting. ^h Closed. ⁱ State of war declared by Germany; Dec. 11, 1941. ^j Severance of diplomatic relations, Dec. 11, 1941; state of war declared by Hungary, Dec. 13, 1941. ^k Accredited also to Afghanistan; resident at Tehran. ^l State of war declared by Italy, Dec. 11, 1941. ^m State of war declared by Japan, Dec. 7, 1941, United States time. ⁿ Vacant. ^o State of war declared by Rumania, Dec. 11, 1941. ^p Accredited also to Egypt; resident at Cairo.

It was fifth among Protestant communions in the United States in 1941. In policy the churches are congregational. There are six major agencies of the communion: The United Christian Missionary Society; Board of Higher Education; Association for the Promotion of Christian Unity; Pension Fund; National Benevolent Association; Board of Church Extension; besides the missionary societies of the several states and provinces of Canada. These agencies are corporations and are affiliated with the International Convention of Disciples of Christ which meets annually. The general missionary work, both home and foreign, of the churches is administered through The United Christian Missionary Society, with headquarters at 222 Downey Avenue, Indianapolis, Ind.

During the year there were 4,782 baptisms in the foreign fields. The 417 mission schools had a total enrollment of 14,849. The communion maintained 9 hospitals and 18 dispensaries which gave 558,858 treatments. The Church Extension Fund amounted to \$2,785,728.75 with outstanding loans to 423 churches. The Pension Fund for the ministry showed assets of \$3,054,082. One hundred fifteen young people's conferences were held. Work in America was conducted among the French, Highlanders, European immigrants, Negroes, Orientals, Spanish-Americans and Mexicans. The National Benevolent Association maintained six homes for children, and an equal number of homes for the aged. In 1941, 21 Colleges, Universities, Bible Colleges and Foundations cooperated with the Board of Higher Education. The total church membership throughout the world in 1941 was 1,834,562, a gain over 1940 of 5,097; and in the United States and Canada 1,671,966, a gain of 2,744. The Bible School enrollment for the world was 1,175,087, a loss over the previous year of 17,703, and for the United States and Canada, 1,117,680, a decrease of 15,695. Contributions, missionary, benevolence and educational, reported for the fiscal year in the United States and Canada totaled \$3,949,384.73.

Among the periodicals published by the communion are *World Call*, *The Christian-Evangelist*, *Christian Standard* and *Front Rank*. The president of the International Convention held in St. Louis, Missouri, in May, was Dr. Harry B. McCormick, Cleveland, Ohio. Dr. W. A. Shullenberger, Indianapolis, Indiana, was elected president of the Convention to be held in Oakland, Calif., in August, 1942.

DISEASES. See BIOLOGICAL CHEMISTRY; CHILDREN'S BUREAU; DENTISTRY; MEDICINE AND SURGERY; PSYCHIATRY; PUBLIC HEALTH SERVICE; VETERINARY MEDICINE; VITAL STATISTICS. For prehistoric diseases, see ANTHROPOLOGY.

DISTRICT OF COLUMBIA. An area coterminous with the city of Washington, the seat of the U.S. Government. Area: 69 sq. mi., including eight sq. mi. of inland water. Population: (1940 census) 663,091. The urban population comprises 100.0 per cent of the total (U.S. average, 56.5 per cent); non-white population, 28.6 per cent (U.S. average, 10.2); elderly (65 years and over), 6.1 per cent. The District of Columbia represents a density of 10,870.3 persons per square mile. For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education, there were 100,672 pupils enrolled in the School System during the school year 1937-38. Of this total, 76,292 were enrolled in kindergartens and elementary schools and 24,380

in secondary schools; 36,616 were in separate Negro schools. The instructional staff comprised 3,158 persons, who received an annual salary of \$2,339 (U.S. average, \$1,374); 415 or 13.8 per cent were men. Expenditures for all public schools in 1937-38 were \$12,016,604, making a total cost per capita of 18.89 (U.S. average, \$17.15). There were 173 school buildings in the District of Columbia, of which one was a one-room, one-teacher school. The value of public property used for school purposes was \$51,495,673. For higher education, see *District of Columbia* under UNIVERSITIES.

Transportation. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 165,220; 146,612 were private and commercial automobiles, 1,374 busses, and 13,928 trucks and tractor trucks. Gross motor-fuel consumption was 169,512,000 gallons. Net motor-fuel tax receipts were \$3,229,000, the rate being two cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$1,751,000.

Railways of all classes extended 35 miles (Dec. 31, 1939) .01 per cent of the total mileage in the United States. Class I steam railways (19 miles) reported 188,517 tons of revenue freight originating in the District of Columbia in 1940 and 3,864,678 tons terminating in the District of Columbia. There are four airports and landing fields in the District of Columbia (three lighted fields) and two seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 261 civil aircraft in the District of Columbia and 667 airline transport, commercial, and private pilots (522 private).

Manufacturing. According to the 1939 Census of Manufactures, there were 497 manufacturing establishments in the District of Columbia, employing 7,877 wage earners who received \$11,772,280 in wages for the year. The total value of products was \$79,875,299; value added by manufacture, \$44,316,845.

Mineral Production. Value of mineral products totals only about a half million dollars annually, according to the U.S. Bureau of Mines.

Trade. According to the 1940 census there were 753 wholesale establishments in the District of Columbia, employing 10,250 persons, reporting net sales for 1939 of \$347,772,000 and annual pay roll of \$18,388,000. There were 6,893 retail stores with 48,072 employees, reporting sales of \$402,768,000 and pay roll of \$56,007,000. Service establishments numbered 3,830, employing 13,610 persons for \$14,858,000 per year, and reporting a business volume amounting to \$39,491,000.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in the District of Columbia was \$16,395,000. Under the Social Security program 3,494 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$25.74 (U.S. average pension, \$21.08); 2,888 dependent children in 982 families received average monthly payments of \$37.28 per family (U.S. average, \$32.73); and 234 blind persons received \$30.55 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 2,075 and received \$24.57 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 431 (\$29,000); NYA student work program, 1,582 (\$18,000); NYA out-of-school work program, 1,542 (\$29,000); WPA, 7,909 (\$676,000); other Federal emergency proj-

ects, 401 (\$52,000); regular Federal construction projects, 12,261 (\$2,194,000).

Officers. The District is administered by a three-man board of Commissioners, two of whom are appointed by the President and confirmed by the Senate for three-year terms. The third Commissioner is selected by the President from time to time from the U.S. Army Corps of Engineers. The Commissioners in 1941 were: John Russell Young, President; Guy Mason; and Col. C. W. Kutz, Corps of Engineers, U.S.A.

Compare the topics listed under WASHINGTON, D.C.

DIVORCE. See articles on States under *Legislation*, as ARKANSAS, INDIANA.

DJEBEL DRUSE. See SYRIA AND LEBANON.

DOBRUJA. See BULGARIA under *Area and Population*.

DOCTORAL DISSERTATIONS. See PHILOLOGY, CLASSICAL.

DODECANESE ISLANDS. See AEGEAN ISLANDS, ITALIAN.

DOGS. Champion Nornay Saddler, James Austin's smooth fox terrier, was the outstanding dog of 1941, despite the rare feat performed by Herman Mellenthin's cocker spaniel, Ch. My Own Bruce, in winning the great Westminster show at Madison Square Garden in New York City for the second consecutive year. The fox terrier had been retired for all time late in 1940, but Austin wanted to see him in a ring once more and entered him at the great Morris and Essex outdoor show in May, and Nornay Saddler easily sidled into the "best in show." This was Saddler's fifty-sixth "best in show" award, marking him one of the best dogs of all time in a show sense. My Own Bruce was the first repeater at the Westminster show in a decade—since Pendley Calling of Blarney early in the Thirties. Dr. Samuel Milbank's Cinar's Chuck was the top field dog of the year, taking three Eastern open all-age stakes.

DOMINICA. See WINDWARD ISLANDS.

DOMINICAN REPUBLIC. A West Indian island, occupying the eastern two-thirds of the island of Hispaniola (Haiti). The name of the capital was changed from Santo Domingo to Ciudad Trujillo, Jan. 9, 1936.

Area and Population. Area, 19,332 square miles; population, estimated on Dec. 31, 1939, at 1,655,779. About 40 per cent of the inhabitants are white (mainly of Spanish descent), 40 per cent mixed, and 20 per cent Negro. American citizens, including Puerto Ricans, in the republic in 1941 numbered 3,158, other foreigners in 1935—Haitians, 52,657; British subjects, 9,272; Spaniards, 1,572. Populations of the chief cities (1935 census): Ciudad Trujillo, 71,297; Santiago de los Caballeros, 33,919; San Pedro de Macoris, 18,889; Puerto Plata, 11,777. Birth rate in 1939, 32.6 per 1,000; death rate, 8.8. Language, Spanish.

Defense. As of Nov. 1, 1940, there were 3,147 officers and men in the active army and 71 in the air force. The municipal police, organized as a national constabulary in 1936, form an auxiliary branch of the army. There are four coastal patrol vessels. National defense budget for 1941, \$2,128,000.

Education and Religion. Four-fifths of all adults were illiterate at the 1935 census. In 1940 there were 947 primary schools with 103,000 pupils, 6 secondary schools with 1,550 pupils, 45 vocational

schools with 3,300 pupils, 3 normal schools with 2,000 students, and the University of Santo Domingo with about 350 students. About 97 per cent of the inhabitants are Roman Catholics.

Production. Agriculture supports about 80 per cent of the population. Raw sugar accounted for 70.3 per cent of the value of all exports in 1940. Sugar production for the crop year ended August, 1941, was 399,957 metric tons (454,836 in 1939-40). Leading exports in the calendar year 1940 were (in metric tons): Raw sugar, 414,114; cacao, 23,018; coffee, 8,567; molasses, 128,162; yucca starch, 6,379; refined sugar, 4,239; corn, 10,787. Banana exports were 693,022 stems; cattle, 5,573 head. Rice culture, introduced in 1936, produced an export surplus in 1941. Potatoes, beans, onions, peanuts, pineapples, etc., are grown mainly for home consumption. Sugar refineries employ about 92 per cent of all persons engaged in industry. Forests yield mahogany, espinillo, lignum-vitae, cedar, and other cabinet and dye-woods.

Foreign Trade. Imports in 1940 totaled \$10,511,403 (\$11,592,166 in 1939); exports, \$18,330,135 (\$18,643,302 in 1939). Raw sugar exports in 1940 were valued at \$12,882,807; cacao, \$1,617,104; coffee, \$769,975; molasses, \$546,996; yucca starch, \$523,518. The United Kingdom took 41.2 per cent of the 1940 exports (36.2 per cent in 1939); United States, 24.7 (27.1); Canada, 15.5 (0.2); France, 6.2 (11.9). Of the 1940 imports, about 61 per cent came from the United States, 8.5 from Japan, 7 from British India and 5.7 from the United Kingdom. See TRADE, FOREIGN.

Finance. The 1941 budget anticipated receipts of \$12,167,000 and expenditures of \$12,156,000 (\$12,140,000 and \$12,135,000, respectively, in 1940). Actual receipts in 1939 were \$12,296,000; expenditures, \$11,933,000. The foreign funded (dollar) debt totaled \$15,250,000 on Jan. 1, 1941; internal (floating) debt, about \$3,265,104. In addition the Export-Import Bank of Washington had outstanding a credit of \$25,000 to the Dominican Government as of Mar. 31, 1941, and was committed to make additional loans of \$3,275,000. The Dominican peso is equivalent to one U.S. dollar. For abolition of the U.S. customs receivership, see *History*.

Transportation. In 1941 there were two state-owned railways with 147 miles of line; 2,141 miles of highways and roads; regular connections with Pan American Airways' Caribbean circuit at San Pedro de Macoris; a deep-water port at Ciudad Trujillo and ports for lighter craft at Azua, Barahona, La Romana, Monte Cristi, Puerto Plata, Sanchez, and San Pedro de Macoris. The Government in 1941 decided to suspend service on the railway lines and convert the roadbeds into automobile highways. The Dominican merchant marine consists of 123 ships of 6,752 tons.

Government. The Constitution of June 20, 1929, revised as of June 9, 1934, vests executive power in a President elected for 4 years by direct vote. There is a Congress of 13 Senators and 35 Deputies, elected for 4 years by direct suffrage of literate males. However Gen. Rafael Leonidas Trujillo Molina's Dominican party is the only political organization permitted. Trujillo was President of the republic from Aug. 16, 1930, to Aug. 16, 1938, when he was succeeded by his own candidate, Dr. Jacinto B. Peñado. When Peñado died, Vice President Manuel de Jesús Troncoso de la Concha assumed the Presidency (Mar. 8, 1940). As officially-designated Benefactor of the nation, General Trujillo enjoyed a legal status co-equal with that of the President. As War Minister, he remained in active control of the army.

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Internal Politics. The Dominican dictator, General Trujillo, toward the end of 1941 indicated his intention of resuming the Presidency upon the expiration of President Troncoso de la Concha's term Aug. 16, 1942. At the instigation of his Dominican party, a meeting of leading citizens in Ciudad Trujillo on October 24 unanimously urged him to stand for reelection. Trujillo had previously (June 5) announced his intention of drafting a new Constitution conferring the suffrage and the right to hold public office upon women. On December 16 the voters were asked to pass upon this and numerous other constitutional amendments, among them an extension of the Presidential term from four to six years and a reduction in the number of Congressional representatives. The reforms were approved by the customary large majority, according to the Government.

Relations with United States. The dictator's firm grip on Dominican affairs was strengthened through the termination on Apr. 2, 1941, of American control of Dominican customs collections under the convention of Dec. 27, 1924. The customs receivership, inaugurated in 1905, was ended in accordance with the convention of Sept. 24, 1940, which was ratified by the U.S. Senate Feb. 14, 1941 (see *YEAR BOOK* for 1940, p. 190, for provisions of convention). Under the 1940 convention, the Ciudad Trujillo branch of the National City Bank of New York was designated as the sole depository bank of the Dominican Government for the purpose of insuring interest and amortization payments on outstanding dollar bonds. On October 26 this branch bank and four other Dominican branches of the National City Bank were sold to the Dominican Government and reorganized as the Reserve Bank of the republic. The Reserve Bank became the designated depository bank under the 1940 Dominican-American convention. It was authorized to perform all customary banking transactions but was not a bank of issue. Its authorized capital of \$1,000,000 was supplied by the Government. Withdrawal of the National City Bank left the Royal Bank of Canada and the Bank of Nova Scotia as the only private banks operating in the republic.

In addition to the \$3,000,000 credit granted the Dominican Government Dec. 9, 1940, by the Export-Import Bank of Washington, a credit of \$300,000 was authorized Mar. 3, 1941, for the purchase of United States industrial products. Legislation enacted by the Dominican Congress early in 1941 provided for utilization of the \$3,000,000 credit as follows: \$400,000 to build a hotel in Ciudad Trujillo, \$275,000 for a modern slaughterhouse in the same place, \$1,498,428 for dredging the harbor at San Pedro de Macoris, and \$784,372 for construction of docks and warehouses at the latter port. These expenditures were designed to stimulate the tourist and cattle-raising industries. It was planned to ship Dominican beef to nearby Puerto Rico, especially for use of the expanding U.S. defense establishments there.

When the United States was attacked by Japan on December 7, the Dominican Government declared war on Japan (December 8) and on Germany and Italy (December 11).

Economic and Other Matters. Economic activity was seriously depressed during most of 1941 by the closing of British and other European markets to Dominican sugar, on the sale of which the republic's economy was chiefly dependent. Dominican sugar also was barred from the United States market by the quota system. The sugar producers consequently adopted a scheme for converting

sugar into alcohol, which was expected to find a market in the United States. Exports of Dominican products to Canada also expanded—from \$17,000 in 1939 to \$3,413,000 in 1940. The economic outlook became much brighter when the British Government early in December was reported to have purchased the entire 1941-42 sugar crop at guaranteed minimum price.

Nearly a thousand more refugees from Europe settled during 1941 at the Sosua colony established in 1940 (see *YEAR BOOK* for 1940). On January 10 it was announced that President Trujillo had donated an additional 50,000 acres adjacent to the original tract of 26,000 acres.

On September 5 Trujillo crossed the frontier into Haiti for a conference with the newly elected President of Haiti, Elie Lescot. Incidents along the border were among the subjects discussed. On September 9 the Haitian Government admitted that Haitian "gangs of marauders" had been stealing livestock in the Dominican Republic and selling it in Haiti. This thievery and the resulting clashes with Dominican herdsmen were stated to have been "provoked for the most part by persons interested in creating friction between the two Governments." The statement asserted that "good relations actually existing between the two heads of both Republics have not been altered." Steps to prevent recurrence of these incidents were taken.

See LEND-LEASE ADMINISTRATION; PAN AMERICANISM.

DONATIONS. See PHILANTHROPY.

DRAFT. See topics listed under CONSCRIPTION; SELECTIVE SERVICE SYSTEM.

DRAMA. See THEATER. For published plays, see LITERATURE, ENGLISH AND AMERICAN, and articles on foreign literatures.

DRESS. See FASHION EVENTS; GARMENT INDUSTRY; LIVING COSTS.

DROUGHT. See LIVESTOCK; WATER WORKS

DRUG ADDICTION, DRUGS. See FOOD AND DRUG ADMINISTRATION; NARCOTIC DRUGS CONTROL; PUBLIC HEALTH SERVICE; also, medical topics.

DRY-DOCKS. See PORTS AND HARBORS.

DUKE ENDOWMENT. See PHILANTHROPY.

DUNKERS (DUNKARDS). See BRETHREN.

DUTCH AND BELGIAN LITERATURE. In countries which have no freedom one can hardly expect great literature. It is therefore probable that most of the recent literary publications in the Netherlands and Belgium will not survive our time. Only a few talented writers escape the Nazi censorship, largely because they write in a symbolic "secret" language, which is intelligible to but a happy few.

The writers of "train literature," comparable to American pulp fiction, enlarged or at least kept their market, for the Nazis know that mediocrity is never dangerous. Most of those authors abhor the Nazis no less than do the great writers whose ideas undermine and attack the national socialist ideologies. The great, however, were eliminated or had to keep quiet.

Peoples like the Dutch and Belgians whose spirit is hurt but far from broken, search for self-affirmation; but since the present is depressing and the future cannot be discussed openly, they have to find comfort and courage in the past. Books of history—although mostly mediocre—enjoy a tremendous popularity. Their main purpose is to provide for the wants of people who never felt more patriotic than under the rule of the enemy. To satisfy the curiosity of the population many books have been published about the short battle against the

Germans in Holland and Belgium. These books are not even important as historical documents, for naturally the writers were not allowed to tell the truth about the most essential matters.

Before the invasion there existed an active anti-Nazi front of writers in the Low Countries, which seemed to break down completely after the invasion. But it is more than probable that the work of the leader of these anti-Nazi writers is read widely, especially now—even if his books are not discussed in public. He is Menno ter Braak, perhaps Holland's most important thinker since Multatuli. Ter Braak belonged, with a few others—J. Greshoff and E. du Perron—to the most intelligent fighters against national socialism. Greshoff is the only one of these three still alive. Ter Braak committed suicide as the Germans took over the Netherlands. Du Perron died of a heart attack during the invasion.

Not long before the invasion of the Low Countries Ter Braak published a little book of great significance, *The New Elite*. His new elite stand apart from both the new barbarians and the old, Western, Christian world. It is an elite of new Christians who accept the cultural achievements of our Christian civilization, but look for new ways to follow—however, without tying themselves down to new dogmas.

The greatest of all contemporary Dutch writers lives outside Holland, in Sestri Levante, Italy. He is Arthur van Schendel, candidate for the Nobel prize. Several of his books have been translated and published in France, England, and Italy. A new philosophical novel of Van Schendel came out in Amsterdam during the year, *Mijnheer Oberon en Mevrouw (Mr. and Mrs. Oberon)*.

The poet and satirical moralist Jan Greshoff left the Netherlands in time; he lives in Capetown, South Africa. If Greshoff had stayed in Holland, it is likely that he would have been sent to a concentration camp on account of his anti-Nazi poems and essays. Since almost everyone has by now been awakened to the dangers of national socialism, it is not astonishing that Greshoff in his most recent work has returned to the age-old problem: the state of the writer in the world, with emphasis on his position in these times of brutal aggression. His works published in 1941 were *Mimosa Pudica*; *Kalender zonder Dagen (Calendar without Days)*, and *Rariteiten (Curiosities)*.

In prewar days, a warning against the Nazi danger perhaps could not be uttered loudly enough. Greshoff, however, despises the phraseology that weakens or spoils so much of the current literature that wants to be timely at all costs. Therefore, to avoid "clichés," he very consciously escapes in a more liberal past at the end of the 19th century, in which he feels much better at home.

Thus we notice two important trends in recent literature in the Low Countries: Greshoff points out how it has been possible to live well; ter Braak shows how it will again be possible to live a happier, more dignified and more intelligent existence.

A young Dutch writer, Leo Vroman, has proved that it is not quite impossible to write good literature dealing with the present. An unusual story, *De adem van Mars (The Breath of Mars)*, about his escape from his country was published in the Netherland East Indies literary magazine, the *Fakkel*. According to its editors this periodical wants to keep "the flame of Dutch literature burning." We cannot forget, however, that the literature of the Low Countries shall only live fully again when they and the whole of Europe are free and intellectually and emotionally awake once more.

ADRIAAN VAN DER VEEN.

DUTCH EAST INDIES. See NETHERLANDS INDIES.

DUTCH GUIANA. See SURINAM.

DUTCH WEST INDIES. See CURAÇAO; SURINAM.

DUTIES. See CUSTOMS, BUREAU OF; TARIFF COMMISSION, U.S.

EARTHQUAKES. See SEISMOLOGY.

EASTERN ORTHODOX CHURCHES. See RELIGIOUS ORGANIZATIONS.

ECONOMIC DEFENSE BOARD. See ECONOMIC WARFARE, BOARD OF.

ECONOMICS. See BUSINESS REVIEW; FINANCIAL REVIEW; LABOR CONDITIONS; LIVING COSTS AND STANDARDS; PLANNING, ETC. For books on the subject see LITERATURE, ENGLISH AND AMERICAN under *Economics*. For economic conditions see countries under *History*.

ECONOMIC WARFARE, Board of. President Franklin D. Roosevelt, by Executive Order on July 30, 1941, established an Economic Defense Board for the purpose of developing and coordinating policies, plans, and programs designed to protect and strengthen the international economic relations of the United States in the interest of national defense.

The term "economic defense," as used in the order, was defined as "the conduct in the interest of national defense of international economic activities, including those relating to exports, imports, the acquisition and disposition of materials and commodities from foreign countries including preclusive buying, transactions in foreign exchange and foreign-owned or foreign-controlled property, international investments and extensions of credit, shipping and transportation of goods among countries, the international aspects of patents, international communications pertaining to commerce, and other foreign matters."

The initial order named the following as members of the Board: the Vice President, Chairman; the Secretaries of State, Treasury, and War; the Attorney General, and the Secretaries of the Navy, Agriculture, and Commerce. The Chairman was authorized to appoint other members, with the approval of the President, and each member was authorized to designate an alternate, subject to the approval of the Chairman. Other agencies of the Government were directed to designate officers, subject to the approval of the Chairman, to represent the department or agency in its continuing relationships with the Board.

The first functions and duties of the Board were to advise the President on essential economic defense measures; to coordinate the policies and actions of the several departments and agencies carrying on activities relating to economic defense; and to develop integrated economic defense plans and programs for coordinated action by the departments and agencies concerned. The Board also began investigations to determine the relationship of economic defense measures to post-war economic reconstruction.

On September 15 the President signed an Executive Order placing the Office of Export Control, which had been established under the act of July 2, 1940, under the Economic Defense Board. All the powers and functions of the Office of Export Control, including the requisitioning "of certain articles and materials for the use of the United States and for other purposes," were vested in the Board. The Division of Controls of the Department of State was also put under the Board as the Commodity Licensing Division of the Office of Export Control.

The Board was also designated, in the Executive Order of September 15, as the agency to obtain, develop and determine over-all estimates of materials and commodities required for export purposes in the interest of the economic defense of the nation, exclusive of lend-lease operations, and to advise the Supply Priorities and Allocations Board (q.v.) of such estimated requirements.

A clearing service, to which exporters, manufacturers, and foreign importers submit proposals for the export of materials and commodities, was reorganized under the Board to expedite such clearance through the several Federal agencies concerned with the control of exports and related financial transactions.

An Executive Order of Oct. 28, 1941, established the Office of Lend-Lease Administration (q.v.) and authorized the Administrator to make "appropriate arrangements with the Economic Defense Board for the review and clearance of those lend-lease transactions which in the judgment of the Board affect the economic defense of the United States."

On Nov. 22, 1941, in recognition of the growing importance of the Government's economic program in the Western Hemisphere, the Vice President appointed the Coordinator of Inter-American Affairs (q.v.) as a member of the Economic Defense Board. At the same time the Board began a reorganization of its units into four regional divisions, the European and African, the Far Eastern, the British Empire, and the American Hemisphere. The Commercial and Financial Division of the Coordinator's Office and the divisions of the Board engaged in Western Hemisphere matters became the American Hemisphere Division of the Economic Defense Board.

On Dec. 9, 1941, the Department of Commerce placed certain facilities at the service of the Board. It was decided that all functions of the Department of Commerce devoted to international economic affairs should take their principal direction during the war from the Board, of which the Secretary of Commerce is a member. During the war the Board will have the facilities also of the U.S. Tariff Commission. Before the outbreak of the war with Japan, the Tariff Commission had already undertaken to act as a research organization for the Board in gathering and analyzing data with respect to the maximum supply of certain strategic and critical materials which may be obtained from foreign countries in the next two years.

By Executive Order on Dec. 17, 1941, the title of the Board was changed from Economic Defense Board to Board of Economic Warfare. The Board is directly under the President, and has an Executive Director under whom are the Legal Division, the Liaison with Foreign Governments, the Administrative Management Division, and the Operations Division. Under the Assistant Executive Director in Charge of Operations are the Policy Committee, the Information Section, the Office of Export Control, and the Geographical Divisions.

The total number of commodity licenses granted, from January through November, 1941, by the Office of Export Control was 214,771. The dollar value of these commodities licensed for export, excluding arms and ammunition, was \$956,012,314. The value of arms and ammunition licensed for export during this period was \$1,920,388,433.

The Technical Data License Division, between April 15, 1941, and Dec. 22, 1941, received 16,771 applications for export license. During this period, 11,271 special licenses and 758 blanket licenses were granted.

Up to Dec. 11, 1941, the Requisitioning Divi-

sion had executed 257 requisitions. Of these 225 cases had been referred to the Compensation Board. A total of 95 cases, representing a value of over \$10,000,000, had been heard by the Board. Pending, as of Dec. 20, 1941, were 130 cases of an estimated value of about \$18,000,000.

Immediately following the attack upon the United States by the Japanese armed forces, the Board, through the Office of Export Control, invoked a total embargo on exports to Japan and its occupied territories by revoking all licenses for the shipment of American goods to those countries and to all Japanese nationals anywhere in the world. Export control was extended, as of Dec. 23, 1941, to cover all articles and materials not previously brought under control. Even before that date, approximately 90 per cent of all American-produced commodities were under licensing regulations.

The policy of the Board, however, has been and is to allow the continued flow of articles and materials to American Republics and other friendly destinations under broad general licenses and specific allocations of critically needed materials.

MILO PERKINS.

ECUADOR. A South American republic. Capital, Quito

Area and Population. Ecuador's boundary with Peru remains unsettled. The area claimed by Ecuador is officially estimated at 276,007 square miles, including the Galápagos Islands (2,868 square miles). Estimated population in 1940, 2,921,688 (about 10 per cent whites, 39 per cent Indians, 41 per cent mixed, and 10 per cent Negroes and Orientals). Estimated populations of the chief cities: Quito, 215,921, Guayaquil, 180,000; Cuenca, 48,300; Ambato, 25,200. United States citizens residing in Ecuador on Jan. 1, 1941, numbered 562, Germans, about 2,000.

Defense. As of November, 1940, Ecuador had about 5,450 men in the active army, 450 in the air force, and some 40,000 trained reserves. There were a few small naval vessels. The defense budget for 1941 was 24,677,000 sucres (21 per cent of the total ordinary expenditures). United States naval and military aviation missions were engaged Dec. 12, 1940, for four-year terms. See *History*.

Education and Religion. Although primary education is nominally free and compulsory, the Indian and mixed races are largely illiterate. In 1938 there were 221,031 primary, 8,323 secondary, and 1,475 university students enrolled. The education budget for 1941 was 20,271,000 sucres (17 per cent of the total budget). Roman Catholicism is the dominant faith but there is no state religion.

Production. Agriculture supports about 90 per cent of the population, but minerals produced by foreign-owned companies accounted for 36 per cent of all 1940 exports. Yields of the chief crops (in metric tons) were: Cacao, 11,665 in 1939-40; coffee, 16,800 in 1940-41; sugar, 29,526 in 1939-40. Rice production in 1940 was 853,891 quintals (of 101.4 lb.). Tobacco, bananas and other fruits, cotton, corn, lentils, and vegetables are other crops. Vegetable ivory is an important export; the forests also yield cabinet woods, cinchona bark, kapok, rubber, balsa wood and other timber, and tannin. The 1940 petroleum output was 2,349,000 bbl. (2,313,000 in 1939); newly mined gold purchased by the Central Bank, 1,389,678 grams (1,152,148 in 1939). Straw hats, textiles, shoes, paper, leather, cement, chocolate, refined sugar, alcoholic beverages are the chief manufactures.

Foreign Trade. Imports totaled 173,753,312 sucres

(\$11,154,509) in 1940 and 147,860,226 sucres (\$10,184,340) in 1939, while exports were 177,058,059 sucres (\$11,331,832) in 1940 and 167,148,189 sucres (\$11,513,523) in 1939. Leading exports in 1940 were: Cacao, \$1,839,900; cyanide precipitates (chiefly gold), \$1,830,000; crude petroleum, \$1,600,000; coffee, \$1,034,100; rice, \$920,600; gold and silver bullion, \$753,500; copper and lead concentrates, \$683,200. The United States supplied 59.4 per cent of the 1940 imports (48.7 in 1939); Japan, 10.5 (5.3); Germany, 2.0 (18.1). Of the 1940 exports, 59.9 per cent went to the United States (49.1 in 1939) and 27.3 per cent to the other Latin American republics (19.6 in 1939).

Finance. Actual budgetary receipts in 1940 were reported at about 106,300,000 sucres. Budget estimates for 1941 balanced at 125,902,000 sucres; for 1942, at 130,800,000 sucres. Foreign funded debt on June 30, 1939, \$26,470,000 (mostly in default), internal debt on Jan. 2, 1939, 26,059,254 sucres. U.S. Export-Import Bank credits to Ecuador outstanding Mar. 31, 1941, totaled \$30,000, with a commitment covering \$1,150,000 more. Exchange rate of the sucre (Central Bank rate) averaged \$0.06233 in 1940 (\$0.06744 in 1939).

Transportation. Ecuador in 1940 had about 775 miles of railway line; new lines were under construction as follows: Quito-Ibarra, Tambo-Cuenca, Guayaquil-Salmas. Roads passable to automobiles in 1941 extended 3,311 miles; in that year contracts were let with United States credits for 260 miles of new roads spanning two uncompleted sectors of the Pan American Highway and providing direct access from the ports of Esmeraldas and Manta to the interior towns of Quito and Jipijapa, respectively. Two air systems (Pan American-Grace and Sedta, a subsidiary of the German Lufthansa) operated services linking the principal towns (see *History*). Guayaquil is the leading seaport.

Government. The governmental situation has been confused since the *coup d'état* of 1925, when military rule was established. A new Constitution was promulgated in 1929 but continual friction between President and Congress provoked frequent revolutionary outbreaks and a succession of provisional governments, ruling largely by decree. On Sept. 27, 1935, the 1929 Constitution was annulled and the 1906 Constitution provisionally restored. A Constituent Assembly adopted a new Constitution Dec. 1, 1938, but the Congress elected on Jan. 15, 1939, promptly annulled it and the government restored the 1906 Constitution with certain reservations. President in 1941, Dr Carlos A. Arroyo del Río (Liberal Radical), who assumed office Sept. 1, 1940. See below for 1941 developments.

HISTORY

Conflict with Peru. The century-old territorial dispute between Ecuador and Peru flared out in an undeclared war during 1941, despite all neutral efforts at mediation. A revival of armed clashes between frontier patrols in December, 1940, aroused the Ecuadorean people to make extensive military preparations during the first months of 1941. Frontier incidents continued and the Quito authorities reported a gradual Peruvian penetration into territory occupied by Ecuadorean troops. On April 9 the Ecuadorean Government informed all the American republics of its desire to settle the controversy by neutral arbitration or mediation.

The United States, Argentina, and Brazil on May 9 presented a joint mediation proposal to the two parties. It was enthusiastically and unconditionally accepted by Ecuador. Peru, however, refused to

debate the nationality of three provinces (Jaén, Tumbes, and Mainas) under its *de facto* control, and advanced other reservations which nullified its formal acceptance of the mediation proposal. An uneasy truce along the disrupted frontier was broken early in July by the resumption of desultory fighting.

On July 8 the United States, Argentina, and Brazil jointly proposed the withdrawal of the opposing troops for 15 kilometers on each side of the *de facto* boundary. Both Ecuador and Peru agreed, but the accord was not carried into effect. Instead heavy fighting was resumed about July 23 and continued sporadically during August and September notwithstanding all mediatory efforts of the neutral American republics. Argentine, Brazilian, and United States observers were sent to the zone of hostilities in August, but it was not until October 3 that the three mediating powers obtained an agreement for the establishment of a neutral zone. This was carried into effect and on November 24 an agreement for the exchange of prisoners was announced.

In the meantime Peruvian troops had advanced and occupied the seacoast of the province of El Oro, with its towns of Puerto Bolívar, Machala, and Pasaje, according to Ecuadorean reports. These reports were confirmed by the flight of thousands of refugees from El Oro and other border territories to Guayaquil, Cuenca and other more northern cities. Some 10,000 refugees were estimated to have arrived in Guayaquil alone. The three mediating powers were continuing negotiations for a permanent settlement of the dispute at the year's end.

Political Trends. The conflict with Peru and the reverses suffered by Ecuador's forces added to the instability of the Quito Government and to the chronically disturbed political conditions. On January 12 a Quito mob, demanding release of aviators arrested a year earlier for a revolt plot in Guayaquil (see YEAR BOOK for 1940), stoned the Presidential palace and attacked police. The latter opened fire, killing two persons and wounding 30. The Council of State then gave the President extraordinary powers for 150 days. However President Arroyo del Río relinquished these powers immediately after the Congressional elections of May 11-12. Despite serious schisms within the ranks of the dominant Liberal party, the official (Government) wing of the party retained control of Congress.

Violent popular demonstrations against the Government marked the convening of the new Congress on August 4. Tear-gas was used to disperse crowds around Government buildings, but the political crisis over the conflict with Peru continued until the cessation of hostilities in October. On August 6 Congress in secret session voted the President "unlimited" powers over political, economic, and military affairs. The resignation of the Chief of Staff and Defense Minister early in August was followed by a complete reorganization of the Cabinet August 20. The President's extraordinary powers were used to maintain order, curb anti-Government and defeatist propaganda, and censor the press. On September 28 it was announced that these powers would expire on Aug. 20, 1942. The city council of Guayaquil, accused of gross fraud and corruption, was replaced by government appointees.

Anti-Axis Measures. The struggle between democratic and anti-democratic influences, with the United States and Germany playing leading opposing roles, swung strongly in favor of democracy during the year. Following the lead of the United States, the Government on April 1 ordered the seizure of a German freighter in Guayaquil harbor.

The crew set fire to the ship but the flames were brought under control. The crew was interned.

Early in May the Government declared the secretary of the German Legation at Quito *persona non grata* when he refused to permit customs examination of a package delivered by an air passenger in transit through Ecuador with a diplomatic passport. On September 2 the Government ordered the German-controlled Sedta company to suspend services on its air network. The planes were turned over to Ecuadorean authorities. Pan American Airways established services over the same routes.

Early in the year a number of Spanish Republican refugees were permitted to settle in Ecuador. In July a charge that Japanese were serving in the Peruvian army against Ecuador led to anti-Japanese demonstrations in Guayaquil and the detention of Japanese ships bound for Peru. In response to a vigorous protest from Tokyo, the Ecuadorean Government on August 12 apologized for these incidents. Not long afterwards President Arroyo del Río issued a decree sharply restricting imports of Japanese goods to correct Ecuador's heavy unfavorable trade balance with Japan.

Relations with United States. This friction with the Axis powers was in sharp contrast with increasing evidences of close cooperation with the United States, in both the economic and military fields (see preceding YEAR BOOK for collaboration in 1940). Besides seeking to mediate the Ecuadorean-Peruvian dispute, the U.S. Government early in 1941 undertook to make two coastal patrol ships and some military supplies available to Ecuador in connection with the hemisphere defense program. On May 16 Secretary of State Hull denied Peruvian charges that this aid was being extended in order to obtain U.S. bases on the Galápagos Islands.

Nevertheless the Foreign Office in Quito announced October 24 that Ecuador had granted the U.S. Government "facilities to patrol the Galápagos Islands" as a measure of continental defense. The facilities granted were believed to include installations on Albemarle Island in the Galápagos. This island was leased from an Ecuadorean owner early in 1941 by the Pacific Development Co., incorporated in Delaware and headed by Paul Foster, an American engineer and former U.S. Navy Commander. The Pacific Development Co. received a \$30,000 credit from the Export-Import Bank of Washington on Nov. 30, 1940, for "construction equipment, material and services." This loan was listed under the bank's account with the Ecuadorean Government. On July 19 it was announced in Washington that the Reconstruction Finance Corporation had advanced the Pacific Development Co. another loan of \$500,000 for the development of Albemarle Island. Admiral Frank H. Sadler, U.S. naval commandant at Balboa, C.Z., reported on his return from a visit to the Galápagos on February 13 that the islands would be excellent for a naval base.

The Government in March awarded to a New York engineering firm a contract to build 280 miles of roads in various parts of Ecuador. The cost of \$900,000 was to be met from the \$1,150,000 credit extended by the Export-Import Bank in 1940. Increases in shipments and prices of coffee, cacao, and minerals, due primarily to expanding markets in the United States, also helped to relieve the depressed economic conditions produced in Ecuador by the European War. However rising prices in Ecuador contributed to the prevailing political unrest.

After the Japanese attack of December 7 upon

the United States, the Ecuadorean Government on the following day informed Washington that it was prepared to comply with all of its inter-American obligations. President Arroyo del Río, in a message to President Roosevelt on December 9, declared Ecuador's solidarity and sympathy with the United States. On December 12 the Government announced that as a measure of solidarity with the United States it had decided to ban Nazi propaganda agencies, suspend pro-Axis newspapers, move Japanese out of the port of Guayaquil, and cancel the contracts of Japanese oil technicians employed in the northern coastal region of Esmeraldas.

See CANADA under *History*; LEND-LEASE ADMINISTRATION; NEWSPAPERS AND MAGAZINES; PAN AMERICANISM.

EDUCATION. Defense Program. The defense program in which this country was engaged during the year 1941 had a profound influence on the educational system. First and foremost was the emphasis which the program laid on vocational education. The demand for mechanics of all levels was so urgent that every available facility for training youth and older workmen was drawn into action. Public technical high schools, engineering colleges, and newly established centers organized by the National Youth Administration gave courses to two million workers. In many cases institutions operated twenty-four hours a day.

Some of the training thus provided was confessedly of a highly specialized kind. Workers were not prepared to be all-round mechanics. They were made as competent for a single mechanical operation as a short period of preparation could make them. The country found it necessary to remedy in this way a shortage of skilled workmen which had been allowed to accumulate through the stoppage of immigration and as a result of the failure to make wise provision for the recruiting of skilled craftsmen. Some of the courses given were called "refresher courses." These were designed to revive skills which had deteriorated during protracted unemployment, especially the unemployment that was widespread during the depression. Not only did schools attempt to meet the demands of industry, but many industrial shops adopted plans for the most economical use of workers and for the training of new workers.

While much of the vocational education which was thus stimulated by national needs was less efficient than the kind which a well-conceived, deliberately conducted plan of education would have produced, it made both the general public and educators aware of the importance of changing the traditional curriculum of the secondary schools. There was developed a far more hospitable attitude toward shop courses and other devices for vocational education than had ever existed before. It will undoubtedly be far easier in the future to secure approval for vocational courses by local boards of education than it was in the past.

A second effect which the defense program had on the educational system is seen in the reduction of registrations in institutions of higher education. In summarizing the facts, President Raymond Walters, of the University of Cincinnati, made the following statement:

Precise figures as to student attendance just received from 669 approved universities and colleges of the United States show 838 715 full-time students for the current academic year, or 9.16 per cent less than a year ago, and a grand total of 1,269,854, including part-time and summer-session students, or 8.88 per cent less than last year. These decreases, forming the first sharp drop in enrolment since the depression years 1932 and 1933, are ascribed largely

to the effect of the Selective Service Act and somewhat also to the attraction of defense jobs. The decrease in freshman classes, where the young men are well below draft age, is only 4.52 per cent.

Similarly, the enrolment in public and private junior colleges has decreased. The results of a canvass of these institutions made by the American Association of Junior Colleges are reported in the following statement:

Replies were received from 187, or 72 per cent, of the public junior colleges and from 200, or 57 per cent, of the private junior colleges.

Of the public institutions, 29 reported an increase; 19 no change, 139 a decrease. Reports ranged from an increase of 40 per cent to a decrease of the same amount. Of the private institutions, 73 reported an increase; 56 no change, 71 a decrease. Reports ranged from an increase of 60 per cent to a decrease of 50 per cent.

Social Studies. Indirectly the defense program has resulted in discussions of changes in the curriculum other than those which are aimed directly at vocational training. Numerous efforts are being made to capitalize on the popular eagerness to develop instruction in social studies. The United States Office of Education has issued a series of pamphlets outlining study programs. The titles of three of these pamphlets are *Education under Dictatorships and in Democracies*, *Democracy in the Summer Camp*, and *Hemisphere Solidarity*. The Educational Policies Commission of the National Education Association of the United States and the American Association of School Administrators has undertaken a vigorous campaign for the introduction of lessons designed to cultivate a fuller understanding of the nature of democracy. The Commission has published a number of pamphlets and books under such titles as *Education and the Morale of a Free People* and *The Education of Free Men in American Democracy*.

A committee of the North Central Association of Colleges and Secondary Schools has issued a number of pamphlets dealing with social problems. The following statement indicates the reception that these pamphlets have received.

The response of educational circles to the new material has been encouraging. Two titles, *Why Taxes?* and *Civil Service* were published in the summer of 1939. By January, 1941, 11,560 copies of the former and 9,533 copies of the latter were sold. A third title, *Democracy and Its Competitors*, was placed on sale Sept. 13, 1941. . . . Its timely nature and the value of its contents led to the sale of almost 20,000 copies in three months' time. A fourth title, *Housing in the United States*, came off the press Jan. 8, 1941. At least 1,200 copies have been sold in the Chicago area. Thus a total of over 40,000 copies of the three publications have been purchased in less than two years' time.

Textbook Criticism. That any effort to deal with social problems in the schools is likely to encounter opposition is made evident by a series of events which occurred early in 1941. There have been a number of attempts to bring together in textbooks material which will make pupils in public schools intelligent and critical about American ways of life and about the United States government. Certain conservatives who took offense at the teachings contained in these textbooks induced the National Association of Manufacturers to institute an inquiry into the contents of these books. The Association hired Dr. Ralph West Robey, assistant professor of banking at Columbia University, to read the books in question and prepare a report. It is said that the agreement under which Dr. Robey was to do his work stipulated that he was to make a strictly factual report. He took advantage of the large winter meeting of educators in Atlantic City on February 22, and released without authorization of his employers a broadside of violent criticism, charging, as reported in an article in the *New York Times*, that

A "substantial proportion" of the social science textbooks now used in the high schools of this country tend to criticize our form of government and hold in derision or contempt the system of private enterprise.

By and large, the textbooks commonly used by the 7,000,000 secondary school children of America are poorly written, show a lack of scholarly competence and are generally on a "very low level." There is a notable tendency for books to play down what has been accomplished in this country and to stress the defects of our democracy.

Only a few of the textbooks are actually subversive in content and follow the Communist party line. On the whole, the books do not hew to any "line" as such, but tend to create discontent and unrest by their approach and treatment of government and business questions.

In reply to these criticisms it was at once pointed out by authors and publishers that the citations made by Dr. Robey were in some cases perverted because they were taken out of the settings in which they appeared. Furthermore, it was said that criticism of public officials and their doings is the safeguard of democracy.

Youth Unemployment. Attention was directed in many quarters during 1941 to the problem of unemployment among young people. A release of the United States Bureau of the Census entitled "The Facts about Youth as Portrayed in the 1940 Census" contains the following paragraphs:

The 1940 figures on work status are not exactly comparable with previous statistics because of differences in the definition of workers, but the broad outline of the changes that have occurred is clear. At the beginning of the century, over 60 per cent of the boys 14 to 19 years old were workers in the labor market, in 1930 this proportion had dropped to slightly over 40 per cent, and by 1940 it was below 35 per cent. Similarly for girls 14 to 19 years old, the proportion of workers dropped from 28 per cent in 1900 to 23 per cent in 1930 and 19 per cent in 1940.

The burden of unemployment in March, 1940, was especially heavy on youth just out of school. Less than 70 per cent of the boys and girls 14 to 19 years old who had joined the labor force were employed at non-relief jobs, while 23 per cent of the boys and 26 per cent of the girls were entirely without work and looking for a job. The older youth, in the age class 20 to 24 years, fared better, no doubt because they had more work experience and better training, but even at this age 20 per cent of the male and 15 per cent of the female workers were either out of a job and looking for work or reported that they were on emergency work projects. Unemployment rates for adult workers over 25 years old were only about half as great.

There has been some increase in the employment of young people during recent months as a result of the expansion of American industries. It is quite certain, however, that with the ending of the war there will be once more an acute youth problem which can be solved only by some kind of public supplementation of employment by private industries. The importance of planning at this time for the economic and social adjustment of youth under post-war conditions is fully realized by far-sighted leaders. The National Resources Planning Board has undertaken as part of its general program of planning future public works to discover what is to be done with youth.

An extended and fruitful inquiry into all aspects of the youth problem has been carried on over a period of six years by the American Youth Commission of the American Council on Education. This Commission, composed of ten laymen and five educators, has prepared and published during the period of its existence a series of studies that have done much to describe the situation into which young people have been brought by recent changes in technology and in the texture of the American population. The final report of the Commission, which was approved at its meeting in September, 1941, is a comprehensive document, which is sure to affect national policy in many highly significant ways. The first chapter of this report is entitled "Youth Unemployment as a Continuing Problem." In this chapter the facts are summarized which show that in the future as well as in the present this nation must accept very large new responsi-

bilities for the employment of youth if disastrous consequences arising out of the inability of private industry to provide employment are to be avoided.

It is quite impossible to review here at length the report of the Commission. Two extracts will serve to show the general character of its findings and recommendations.

The American Youth Commission has given very extensive consideration to the problems of relationship between the youth work programs and the schools. In order to clarify its analysis, it has attempted to formulate certain general principles which appear to be applicable.

1. Appropriate amounts of useful work are desirable elements in the experience of children and youth of all ages. During the years of compulsory school attendance, such work should be subordinated to the requirements of schooling. In many instances, productive manual labor and other forms of useful work should be introduced into the school program as an element on a par with other major elements of a well-rounded curriculum.

2. In the personal development of every young person there comes a time when, in his or her own interest and in the interests of society, employment should replace school attendance as his or her major occupation. For many young persons this time comes at the age of 16, the age up to which school attendance should be compulsory. Other persons should continue to devote their time primarily to formal education up to 18, 20, 22, or still higher ages, in accordance with their respective interests and capacities, the needs of society for specially educated persons, and the development of suitable programs in schools and colleges.

3. After they have passed the point up to which schooling should be their major occupation, young people should normally be able without undue difficulty to enter private gainful employment. When the opportunities to do so are not adequate in numbers, it is a function of government to provide the necessary additional opportunities.

4. Persons employed on public work programs because they are unable to obtain other employment, from which they would normally expect to derive income, should be paid a suitable wage. On public work programs which have a distinct training value for those employed, a relatively low wage for beginning workers may be appropriate.

5. It is desirable that beginning employment, whether private or public, be so administered by the employing concern or public agency that the developmental effects for young workers will be as great as possible.

Within the age limits specified [16 to 21], there should be no requirement as to relief status or financial need. One of the major reasons for providing youth work programs is to make certain that young people will be able to obtain the maturing experience of employment at the right stage in their personal development. The need for this experience is not confined to youth in low-income families.

Federally Controlled Program. A new conception of the American educational program issues from the consideration of such conclusions as those quoted from the report of the American Youth Commission. How a suitable program of education is to be worked out is by no means clear at the present time. Leading educational administrators are on record as opposed to all Federally controlled programs of youth training. They demand that State and local school systems be supplied with liberal appropriations from the Federal treasury. They refuse absolutely to accept any Federal control of the program of instruction administered by State and local school systems.

The most emphatic statement of the position described in the preceding paragraph appears in a pamphlet issued in October, 1941, by the Educational Policies Commission under the title *The Civilian Conservation Corps, the National Youth Administration, and the Public Schools*. This pamphlet is sure to be the subject of general discussion in the future. It demands that the Civilian Conservation Corps and the National Youth Administration be abolished. Its other demands raise at once the question whether State superintendents of instruction, State boards of education, and local school officials are competent to deal effectively with the problems of youth. There are undoubtedly many Americans who are of the mind that the solu-

tion of these problems requires a higher degree of statesmanship than is now available in the smaller units of the educational system. One ex-school-board member, Herbert B. Mulford, has thus expressed his beliefs:

There are about 127,000 school districts in the country, controlled by about 424,000 men and women board members. To all practical purposes, these people are left largely without information on public-school objectives, the logic of the ownership of the schools, the needs of youth in a rapidly changing world which is supposed to be democratic and the ways of establishing school policies to meet those needs.

The dilemma of professional educators is not only the possible federal control of education, but the loss of democracy of local units of school government through atrophy of school boards because the profession does not lend them a reasonable, helping hand.

Political Interference in Georgia. It is possible to cite cases where the competency of State educational authorities has been called in question by professional organizations. One of the most striking cases of this type appeared in the State of Georgia during 1941. Governor Eugene Talmadge of that State became obsessed with the idea that administrative positions in the institutions of higher education in his State should be held only by native-born Georgians. He trumped up charges against two "foreigners" and appealed to the State Board of Regents to dismiss these men. The Board refused by a close vote to comply with the Governor's demand. He thereupon exerted pressure on certain members of the Board sufficient to induce them to resign. He then appointed subservient partisans. On a second vote the Board dismissed the two executives who were the subjects of the Governor's attack.

When the Southern Association of Colleges and Secondary Schools reviewed the action of the Board, it dropped from its approved list the ten State colleges of Georgia and issued the following statement of the reasons for so doing.

In the light of all the evidence the committee is forced to conclude that the University System of Georgia has been the victim of unprecedented and unjustifiable political interference;

That the Governor of the State has violated not only sound educational policy, but proper democratic procedure in insisting upon the resignation of members of the Board of Regents in order to appoint to that body men who would do his bidding;

That the Board of Regents has flagrantly violated sound educational procedure in dismissals and appointment of staff members, that every institution in the system is profoundly affected by the precedents established and by the actions already taken whether any of its staff has been dismissed to date or not.

That there can be no effective educational program where this condition exists.

That in view of the actions of the Board of Regents of the University System of Georgia which brought about this condition and in view of its dependence upon the concurrence of the Governor in matters vital to the operation of the system, the Board of Regents does not appear to be an independent and effective educational board of control.

Celebrations. Two notable celebrations were held during 1941. The University of Chicago and Stanford University held educational gatherings in celebration of their fiftieth anniversaries. Both celebrations emphasized the rapid development of graduate work in the institutions of higher education of this country. Fifty years ago it was regarded as a necessary part of the preparation of Americans for advanced scholarly work that they go to European universities. There were colleges in the United States and a few institutions that called themselves "universities," but only at such centers as Johns Hopkins and Harvard were there opportunities for graduate work that compared with the opportunities that existed in the older universities on the other side of the Atlantic.

When William Raney Harper became president

of the University of Chicago and David Starr Jordan became president of Stanford University, a new era of scholarship was ushered in on the North American continent. Both institutions began from the day of their organization to offer facilities for advanced scholarly work such as had never before existed in this country.

It is not easy now, when institutions with large equipment for the prosecution of research exist in many states, to realize how great a task it was fifty years ago to organize universities and set in operation advanced graduate work. In a half-century the migration of Americans to foreign universities has changed entirely in character. While it was once the practice of ambitious candidates for the doctoral degree to go to Europe, there is today no reason in any department to seek better facilities for advanced work than can be found in some institution in the United States. Migration to Europe of candidates for degrees has ceased. See also FAIRS, EXPOSITIONS, AND CELEBRATIONS.

War Demand for Scientists and Educators. As was the case during the first World War, a demand has made itself felt in government and in industry for trained scientists. There has been a great expansion in the research agencies of the Federal government in the two decades which have intervened between the two wars. A parallel expansion has taken place in industry. Most of the larger industrial establishments of the country now have research divisions. A recent report prepared by the National Research Council for the National Resources Planning Board shows the extent to which the research movement has developed in industry and commerce.

It became evident with the onset of the present emergency, even while it was regarded as a temporary emergency, that a directory of available research workers was needed. On the recommendation of the Science Committee of the National Resources Planning Board, arrangements were made to collect with the aid of the learned societies of the nation as complete a list as possible of available persons trained in the techniques and results of scholarly investigation. The Civil Service Commission and President Leonard Carmichael, of Tufts College, undertook the preparation of a roster of scientific workers. This roster has been prepared and now includes approximately two hundred fifty thousand names.

The roster has been much used by governmental agencies in finding the scientists whom they need. The roster is the most comprehensive catalogue that has ever been prepared of the intellectual resources of the nation. Its usefulness has been so completely demonstrated that it will undoubtedly be continued as an essential means of making available for many purposes the names and qualifications of the scholars of the United States.

A topic which has been the subject of careful consideration by educators is the most advantageous use in war of persons who are in attendance at educational institutions and are presumably by virtue of their educational preparation of special value to the nation in certain positions of leadership. A committee was organized early in 1941 by the joint action of the National Education Association and the American Council on Education to consider all the problems that arise in adjusting the relations of educational institutions to the Federal government. This committee found one of its most important duties to be the consideration with the War Department of the problems of the selective service. There can be no doubt that in times past there has been a great waste of the human resources of the nation by improper placement of

personnel. The interchange of judgments between the Army and the educational system and the joint discussion of problems of placement have obviated many difficulties.

At the outbreak of the war the United States Commissioner of Education, with the approval of the Federal Security Administrator, organized a commission the functions of which are defined as follows:

It is believed that through the work of this commission schools, colleges and libraries will be able to render even greater service to the nation at this time of crisis. The people of the country have a right to expect this united effort by the government and organized education.

Among the educational services to the government which the commission will seek to improve are plans for removing the educational handicaps for men rejected in the draft, proposals for the utilization of colleges and universities for the training of various types of Army and Navy personnel, adjustments, if any, which might be made in the matter of college requirements for soldiers and sailors, and to speed up graduation by lengthening the school week, shortening vacation periods or reducing curricular content, and what additional special courses, if any, ought to be financed by the government.

Statistical information is to be found in the articles on SCHOOLS and UNIVERSITIES AND COLLEGES, and in the sections on *Education* for the various States and countries. For advances in dental education, see DENTISTRY; for legal education, see LAW. For training in defense industries, see topics listed under DEFENSE TRAINING. See also CARNEGIE ENDOWMENTS; CIVILIAN CONSERVATION CORPS; COORDINATOR OF INTER-AMERICAN AFFAIRS, GENERAL EDUCATION BOARD; JUVENILE DELINQUENCY; LIBRARY PROGRESS; NATIONAL YOUTH ADMINISTRATION, PHILANTHROPY, PHILOLOGY, PSYCHOLOGY under *Educational Psychology*; the educational groups listed under SOCIETIES.

CHARLES H. JUDD.

EDUCATION, Office of. See EDUCATION

EGYPT. A kingdom of northeastern Africa. Capital, Cairo. Ruler in 1941, Farouk I, who succeeded to the throne Apr. 28, 1936.

Area and Population. Excluding the Anglo-Egyptian Sudan (q.v.), Egypt has an area of about 386,000 square miles of which only about 13,600 square miles along the Nile are occupied. The estimated population on June 30, 1939, was 16,522,000, including about 65,000 Italians and 100,000 Greeks. Populations of the chief cities at the 1937 census were: Cairo, 1,307,422; Alexandria, 682,101; Port Said, 126,907; Tanta, 94,421; Mansûra, 68,637; Asyût, 59,925; Damanhûr, 61,791.

Education and Religion. About 88 per cent of the adult inhabitants were illiterate at the 1927 census. In 1938-39, there were 3,828 native elementary schools with 1,010,534 pupils; 19 higher elementary schools, with 1,272 girl students; 169 state-administered primary schools with 26,503 boy and 3,705 girl students; 42 secondary schools, with 19,029 boy and 1,556 girl students; 75 special and technical schools, with 33,884 male and 1,167 female students; 6 higher colleges, with 1,517 male and 182 female students; and the State University (renamed University of Fuad I in 1941), with 8,293 male and 704 female students. Excluding nomads, the religious division of the 1937 census population was: Moslems, 14,552,704; Copts and Greek Orthodox, 1,099,186; Protestants, 78,203; Latins and Uniate, 126,581; Jews, 62,953.

Production. More than 60 per cent of the inhabitants are engaged in agriculture. The yields of the chief crops in 1939-40 were (in metric tons): Wheat, 1,333,800; barley, 238,200; corn, 1,522,300; rough rice, 887,800; sugar cane, 159,800;

groundnuts, 16,600; cotton, 390,500 (1,671,000 bales in 1941). Livestock statistics for 1937 showed 983,000 cattle, 956,000 buffaloes, 1,919,000 sheep, 1,311,000 goats, 155,000 camels, and 1,142,000 asses. Mineral production for 1940 was: Phosphates, 183,464 metric tons (547,538 in 1939); petroleum, 6,053,000 bbl.; manganese ore, 35,000 metric tons in 1939. The fish catch in 1939 was: Sea and lake, 29,054 metric tons; Nile River, 3,586 tons. The fisheries employed 40,418 men with 9,718 boats.

Foreign Trade. Publication of trade statistics was suspended in July, 1940. In 1939 imports amounted to £E34,090,716 and exports to £E34,080,913, of which raw cotton accounted for £E24,736,918. Germany and Italy shared substantially in Egypt's 1939 trade, but in 1940 and 1941 a declining volume of trade was diverted largely to the British Empire and the United States. Exports to the United Kingdom in 1940 were £10,369,442, imports from the United Kingdom, £8,901,051. United States exports to Egypt (see TRADE, FOREIGN) increased sharply in 1941. Cotton textiles, fertilizer, and fuel are normally the principal imports, but the war brought rapidly increasing shipments of arms and military supplies to Egypt. See *History*.

Finance. Beginning with the fiscal year ended Apr. 30, 1941, the state railways' budget was re-incorporated in the general state budget. Budget estimates for 1940-41 placed revenues at £E47,718,000 and expenditures at £E45,818,000. As of May 1, 1940, the public debt totaled £93,998,100 (sterling) and the annual service charge £4,101,903. The average official exchange rate of the Egyptian pound was \$5.0130 in 1938 and \$4.5463 in 1939. In 1941 it was \$4.1542.

Transportation. Egypt in 1940 had about 3,550 miles of state-owned railway lines and sidings and 880 miles of privately-owned light farm railways. Highways extended 6,838 miles. Cairo is the hub of British air communications in the Middle East, with lines radiating to South and West Africa, Palestine, Baghdad, India, and Australasia. A route for ferrying warplanes to Egypt from the United States via Brazil, West African ports and Khartoum was opened in 1941. Excluding warships and vessels requisitioned for military service, 8,918 steamers of 30,492,332 tons entered Egyptian ports during 1939. Alexandria, Port Said, and Suez were the leading ports. See *SUEZ CANAL*.

Government. The Constitution of Apr. 19, 1923, provided for a Parliament of two houses—a Senate with 147 members serving 10-year terms, two-fifths nominated by the Crown and three-fifths elected by universal male suffrage, and a Chamber of Deputies with 264 members elected for five years. The elections of Mar. 31 and Apr. 2, 1938, for the Chamber of Deputies showed the following results: Liberal Constitutional party, 93; Saadist, 89; Popular Union party, 19; Wafd, 13; Watani, 3; Independents, 47. Premier, Hussein Sirry Pasha, heading a coalition cabinet appointed Nov. 15, 1940.

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Neutrality Maintained. The Egyptian Government throughout 1941 clung to its role as a non-belligerent ally of Great Britain. It faithfully executed the provisions of the Anglo-Egyptian military alliance of 1936 (see *YEAR BOOK*, 1936, for terms). Early in March the British commander in the Middle East, Gen. Sir Archibald Wavell, thanked Premier Hussein Sirry Pasha for the Egyptian army's "cooperation and help" during the successful offensive in Libya. But in accordance with the apparent

wishes of the overwhelming majority of both Parliament and nation, the Government refused to depart from its benevolent neutrality and declare war upon the Axis powers.

In April, May, and June the British suffered severe reverses in Libya, Greece, and Crete that brought the danger of an Axis invasion of Egypt perceptibly nearer. Beginning in May German and Italian planes repeatedly raided Alexandria, the Suez Canal area, and other Egyptian centers. The list of Egyptian civilians killed mounted to over a thousand. After particularly heavy raids upon Alexandria in June and July, more than 100,000 civilians fled from the city to adjacent Delta areas. The Egyptian Government sent formal protests to Berlin and Rome on June 6, and again on September 17 after bombs were dropped on the outskirts of Cairo, considered a holy city by Moslems. Another protest was sent to Germany May 22 against the sinking of the Egyptian steamer *Zamzam* in the South Atlantic by a German raider. But these events, the influence of a pro-war minority of Egyptians, and pressure from Britain all failed to change the Government's neutrality policy.

Pressure for a change in Egypt's policy was relaxed later in the year. The Axis raid on the outskirts of Cairo was not repeated. It provoked protests from both Iraq and Saudi Arabia on religious grounds. Moreover the British threatened to bomb Rome in retaliation. By mid-September Alexandria had established air-raid shelters and other precautions that greatly reduced the number of casualties. In November and December, the British offensive in Libya temporarily removed the danger of an Axis invasion of Egypt from that point.

Internal Politics. The improved international situation brought some relaxation of the dissension among Egyptian political leaders that assumed serious proportions during the critical preceding months. The danger of invasion, uncertainty as to the outcome of the war, and growing economic difficulties contributed to general unrest. The strongly Moslem Egyptians were influenced by the anti-British propaganda of the Axis, which made effective use of Zionist activities and aims in Palestine, Britain, and the United States. After hostilities broke out between the British and the *de facto* Government of Iraq in May, a former Chief of Staff of the Egyptian Army attempted secretly to leave Egypt for Iraq in a military plane with important documents. His plane was forced down and he and two officer associates took refuge in Cairo, where they were arrested June 6 on charges of "injuring the security of the Kingdom." On July 25 the leader of the pro-Fascist Young Egypt movement was arrested for disseminating Axis propaganda.

King Fuad and Premier Sirry Pasha made repeated efforts to form an all-party coalition government to deal with Egypt's pressing internal and external problems. These efforts were balked by the radical, strongly nationalist Wafd, which demanded new parliamentary elections as a prerequisite for its cooperation. The Wafd also demanded that the Government obtain more definite commitments from Britain concerning Egypt's status after the war. A reorganization that strengthened Sirry Pasha's Cabinet was effected July 31, without the cooperation of the Wafd. Five representatives of the strong Saadist party entered the Government while the representatives of the smaller Popular Union party withdrew. The Saadists had resigned from the Cabinet in 1940 because of its refusal to declare war on the Axis.

Reopening Parliament on November 15, Premier

Sirry Pasha declared that Egypt's cooperation with Britain was "becoming closer every day." He outlined the Government's program for dealing with rising prices, the food shortage, and the cotton surplus. The cotton acreage was restricted and a special bonus offered farmers for planting cereals. Minor government employees were promised a bonus to offset the rising cost of living. A Price Control Board was established September 24. The Government during the year sponsored a number of nationalistic economic measures to which foreigners raised objections.

Aid from Britain. The British Government extended substantial aid to Egypt in meeting the war and economic emergency. On June 11 it gave the Egyptian Government £1,000,000 for the improvement of its air raid precautions services and supplied technical assistance to this end. By an agreement signed August 11, the British Government undertook to buy half the Egyptian cotton crop and also half the cotton-seed output at 1940 prices. The Egyptian Parliament authorized a domestic loan equivalent to \$73,000,000 to finance purchase of the other half. The cotton was to be stored pending restoration of foreign markets and shipping facilities.

In line with the British alliance, the Egyptian Government on June 4 listed Syria as "German-occupied territory" and severed all trade and other relations with that French-mandated territory.

See GREAT BRITAIN under *History*, LEND-LEASE ADMINISTRATION; WORLD WAR.

EIB. See EXPORT-IMPORT BANK.

EIRE (IRELAND). A sovereign, independent state, affiliated for certain purposes with the British Commonwealth of Nations; comprising the 26 counties of Southern Ireland formerly designated the Irish Free State. The name was officially changed to "Ireland" in English and to "Eire" in Gaelic by the Constitution effective Dec. 29, 1937.

Area and Population. The area is 26,601 square miles and the population was 2,987,700 at the census of November, 1941, as compared with 2,965,854 at the 1936 census. The increase in population was attributed chiefly to stoppage of emigration to the United Kingdom. Living births in 1939 numbered 56,097 (19.1 per 1,000); deaths, 41,730 (14.2 per 1,000), marriages totaled 14,934 in 1938 (5.1 per 1,000). Populations of the chief cities in 1936 were: Dublin with suburbs, 467,691; Cork, 80,713; Limerick, 41,395; Waterford, 27,962.

Defense. Defense appropriations for 1940-41 (£6,454,601) provided for a standing army of 12,941 officers and men, a reserve force of 1,727, and a volunteer force of 10,030. On May 27, 1940, the government placed the standing army and reserves on a war footing and called for volunteers to expand the standing army and establish home defense units. In September, 1940, men under arms numbered about 100,000, excluding another 100,000 enrolled in local defense units. The defense forces had only three squadrons of airplanes and lacked heavy armaments and tanks.

Education and Religion. School attendance is compulsory and there is practically no illiteracy. Gaelic is gradually supplanting English as the language of instruction. Attendance at elementary schools averages 462,526 and there are about 13,260 teachers; state expenditure on primary schools in 1940-41 was £3,790,718, excluding the cost of administration. Recognized secondary schools, all under private control, numbered 342 with 36,676 pupils in 1938-39. In 1939-40, there were 1,488 students

in Trinity College, Dublin, and 3,965 in the three branches (at Dublin, Cork, and Galway) of the National University. According to the 1936 religious census, there were 2,773,920 Roman Catholics, 145,030 Episcopalians, 28,067 Presbyterians, 9,649 Methodists, and 11,754 of other faiths.

Production. Agriculture, stock raising, manufacturing and fishing are the chief occupations. Yields of root and other non-cereal crops in 1939 were (in long tons): Potatoes, 2,998,480; turnips, 2,579,988; mangels, 1,691,698; sugar beets, 410,403; cabbage, 175,995; flax, 848; hay, 4,182,604.

As of June 10, 1939, there were 4,057,338 cattle, 3,047,813 sheep, 930,907 swine, 445,148 horses, and 19,551,211 poultry. The 1939 fish catch was 187,949 cwt. valued at £196,199. The gross value of production of the principal industries in 1939 was: Grain milling, £10,770,420; brewing, £7,923,446; tobacco products, £7,676,129; butter, cheese, margarine and condensed milk, £6,950,028; bakery products, £5,232,572 in 1938.

Foreign Trade. Imports during 1940 totaled £46,798,948 and exports (including reexports) £35,206,450, as compared with £43,412,488 and £26,892,469 respectively in 1939. Livestock and foodstuffs normally account for 90 per cent of the exports. Great Britain is the chief market and principal source of supply. For trade with the United States in 1940 and 1941, see TRADE, FOREIGN.

Finance. For the fiscal year ended Mar. 31, 1941, actual budget revenues were £34,637,659 (£32,388,747 in 1939-40) and expenditures £37,772,031 (£34,395,023). See *History* The gross public debt on Mar. 31, 1940, totaled £64,831,000; net debt, £32,346,000. The Irish pound, which is convertible into the pound sterling, exchanged at an average of \$4 4354 in 1939 and \$3.83 in 1940 on the free market.

Transportation. Eire in 1940 had 2,511 miles of main railway trackage, 48,550 miles of roads, 650 miles of inland waterways, and an airline connecting Dublin with Great Britain. Gross traffic receipts of the Great Southern Railways in 1940 were £4,402,544; in 1939 gross receipts of all railways were £6,055,577. A total of 11,061 vessels of 7,221,398 tons entered the ports with cargo in 1939, while 4,535 ships of 4,420,832 tons cleared with cargo.

Government. Under the Constitution proclaimed Dec. 29, 1937, there is a President elected by popular vote for seven years. The Oireachtas (Parliament) includes two houses: the Dáil or House of Representatives of 138 members elected by popular suffrage, and the Senate of 60 members (43 elected on a vocational basis, 6 elected directly to represent the two universities, and 11 nominated by the Prime Minister). Executive power is exercised by the government, or cabinet, which is responsible to the Dáil. For further particulars, see 1937 YEAR BOOK. President in 1941, Dr. Douglas Hyde (assumed office June 25, 1938).

The composition of the Dáil following the election of June 17, 1938, was: Fianna Fáil, 77; United Ireland party, 45; Labor, 9; Independents, 5; Farmers, 2. Members of the Fianna Fáil government, as reorganized Sept 27, 1939, were: Prime Minister, External Affairs, Education, Eamon de Valera; Deputy Prime Minister and Finance, Seán T. O'Kelly; Local Government and Public Health, Patrick J. Rutledge; Supplies, Seán F. Lemass; Industry and Commerce, Seán MacEntee; Agriculture, Dr. James Ryan; Coordination of Defensive Measures, Frank Aiken; Lands, Thomas Derrig; Justice, Gerald Boland; Defense, Oscar Traynor; Posts and Telegraphs, Patrick J. Little.

HISTORY

Neutrality Maintained. In spite of severe pressure from both the Allied and Axis sides, Prime Minister de Valera's Government held to its policy of strict neutrality throughout 1941. In January the British press campaign to induce Eire to permit use of naval bases in southern Ireland was intensified as British difficulties in maintaining sea communications increased. A section of the American press also joined in this plea. However the proposal was firmly and repeatedly rejected by de Valera and other Government spokesmen, with the apparent support of the great majority of Eire citizens. In a debate on the subject in the Dail Eireann July 17 John Dillon, deputy leader of the United Ireland party, urged compliance with the British request but received little support even in his own party.

On January 1-3 the Germans gave Eire what seemed like a broad hint not to grant the British request by bombing Dublin and its environs. There were numerous casualties and considerable property damage. The Government demanded reparations from Berlin and took precautions against a possible German invasion. During the night of May 31 more bombs of German origin were dropped on the capital, killing about 27 persons and injuring 87. Again the Dublin authorities protested to the Reich. On June 19 they received an expression of regret and a promise to make financial reparation.

President de Valera declared in an address in Cork on December 14 that the entrance of the United States into the war would cause no change in Eire's neutrality policy.

Relations with Britain. While the issue of acquiring bases in Eire was under discussion, the British Government on January 1 placed exports from Eire in the same category as those from other neutrals. This made Eire products liable to seizure on the high seas unless covered by a British navicert. A few days previously the Board of Trade in London barred the export to Eire, except under license, of certain goods brought to Britain by convoys. While in the United States in April, Eire's Minister of Defense charged that Britain, in violation of an agreement made at the beginning of the war, was not sending Eire a fair share of goods received from overseas.

Another controversy developed on May 22 when Prime Minister Churchill stated before the House of Commons that conscription in Northern Ireland was under consideration. Prime Minister de Valera called the Dail Eireann in special session on May 26 to discuss this issue. Leaders of all the political parties registered their opposition, predicting that the conscripting of the Nationalist minority in Ulster would end hope of continued friendly relations with Britain. The Roman Catholic Primate also issued a statement denouncing any attempt to conscript Catholics in Ulster. On May 27 Churchill announced that the conscription proposal had been dropped.

There was further discussion between the British and Eire Governments in July concerning the utilization of Eire by the Germans as a base for espionage in Northern Ireland and Britain. On this issue de Valera adopted a cooperative attitude. On October 5 he publicly praised Britain's respect for Irish neutrality "despite the temptations and urgings of certain propagandists." Shortly afterwards the British Government concluded a deal for the purchase of cattle and sheep in Eire at a cost equivalent to \$60,000,000.

Defense Preparations. Although the danger of invasion appeared to have declined during the year, the Prime Minister on October 19 repeated his

previous warnings that there was a "high probability" of involvement in the war. The threat of a German attack seemed so acute in January that the Government banned signposts throughout the country, effective February 1. Strict emergency news censorship regulations were imposed January 28. A decree of January 31 empowered the Prime Minister to establish courts-martial for civilians "should the necessity arise."

Early in March the Government sent Defense Minister Frank Aiken to the United States in an effort to buy arms and equipment for 200,000 men. This mission was not successful. The U.S. Government took the position that it had no arms to spare except for countries that were actively fighting the Axis. However through President Roosevelt's influence the Eire Government was authorized to buy or charter two merchant vessels in the United States for the transport of food for the civilian population. Dublin authorities accepted this offer as well as a gift of \$500,000 worth of food and other relief supplies from the American Red Cross, which was distributed among needy refugees from Northern Ireland and Great Britain.

Firm action by the Government restricted the activities of the outlawed Irish Republican Army during the year. Arrests of IRA members and suspects, some of them armed, were reported from time to time. On September 3 a Dublin court sentenced nine Cork members of the IRA to prison terms of three to five years.

The rising cost of defense and other emergency measures was reflected in the draft budget for 1941-42, calling for expenditures of more than £40,000,000. To meet this increased burden, heavy additional taxes were levied on the middle classes and large business enterprises. Nevertheless a deficit of nearly £8,000,000 was anticipated, of which £4,000,000 was to be borrowed. Issuance of an £8,000,000 National Security Loan was announced by the Minister of Finance October 30. Rationing of foodstuffs and imported necessities was extended during the year. A drive for increased farm production attained such success that the Minister of Agriculture on October 27 said there was no danger of a serious food shortage during the coming winter.

See CHEMISTRY, INDUSTRIAL; GREAT BRITAIN under *History*.

ELECTIONS. See States under *Legislation*, as ARKANSAS, INDIANA. For LABOR ELECTIONS, see NATIONAL LABOR RELATIONS BOARD.

ELECTRICAL COMMUNICATIONS. See COMMUNICATIONS.

ELECTRICAL INDUSTRIES. Under impetus of the national-defense program, production by the electrical manufacturers for 1941 reached an all-time peak of \$4,000,000,000, 71 per cent over 1940 and well over the previous high established in 1929. In comparison, general industrial production was up only 24 per cent. As the year ended, 85 per cent of the current dollar volume of goods produced was for defense purposes. With the country now at war, 1942 plans call for at least 91 per cent of dollar volume of goods produced to be for war purposes. More than 60 per cent of the country's electrical manufacturers expanded their production facilities in 1941 and more are expected to do so in 1942. But while concentrating on production for war, the industry is not forgetting to plan for the peace that must follow. Several forward-looking companies are making definite plans for later peacetime activities. Research departments have an eye toward peac

while working on wartime projects, and General Electric Company Vice-President D. C. Prince has drawn up a specific proposal for the anticipated postwar years through 1946. After a rapid rise early in the year, new orders remained at a level about three times higher than the low level of 1938. Shipments are increasing, only 20 per cent behind in October, 1941, compared with 37 per cent in the same month of 1940.

Considering production for 1925 as an index of 100, the Federal Reserve Board index for general production in the United States in 1941 was estimated as 168, compared with 135 for 1940. On the same basis, electrical-industry indexes estimated for 1941, as compared with finals for 1940 are, respectively, as follows: manufacturing, total production, 264 and 154; employment, 151 and 106 (U.S. population, 116 and 115), small appliances, 211 and 151; electrical refrigerators, 2,071 and 1,331; electrical material, 266 and 149, industrial apparatus, 335 and 177; power transmission and distribution equipment, 197 and 124; insulated wire and cable, 164 and 87. While the total production of appliances in 1941 was well above 1940, all were under curtailment at the year-end. Necessity for conserving raw materials for war use will mean further curtailment in 1942—at least 50 per cent and probably more.

Not only did the electrical industry produce great quantities of equipment directly for the use of the armed forces, it also turned out the power-producing and distributing equipment, motors, and control apparatus required by the general wartime industrial expansion. Many of the advances achieved cannot be recorded now, because of their possible value to the enemy.

Aluminum. Production of this vital war metal continued its phenomenal expansion, with new plants and new refining units being constructed in the Northwest, California, Arkansas, and the Southeast, and northern New York State. This required the construction of much conversion equipment, mostly mercury-arc rectifiers, to supply the prodigious amounts of direct current needed for the electrolytic process used to refine aluminum from its ore. To supply power for these expanding operations, the electrical industry built new generating equipment for the power stations supplying them, and plans were being considered for the construction by the Government of a transmission line to carry surplus energy from the New York City area to the new aluminum plant in northern New York State. The first two 108,000-kw hydroelectric generating units for the Grand Coulee plant in the State of Washington, largest of their type, were completed and placed in operation. Eventually, there will be 18 of these units, which will give Grand Coulee 50 per cent greater capacity than the Boulder Dam plant. The requirements of aluminum sheets for aircraft are being met by the installation of new rolling mills, driven and controlled electrically, rivaling the larger steel mills in size.

Steel Industry. Breaking all previous records, steel production for 1941 totaled an estimated 82,900,000 tons of ingots which includes 3,000,000 tons of electric steel. The phenomenal growth of electric-arc-furnace capacity continued through 1941, totaling at year-end more than 4,000,000 tons annually. In addition, some 20 more electric-arc furnaces totaling 1,250,000 tons annually are under consideration. The largest furnaces among the later installations are rated at about 70 tons, but actually can take charges of about 90 tons. For certain types of steels, there is a tendency toward increased use of high-frequency induction furnaces, and it is esti-

ated that 20,000 kw of melting furnaces of this type are installed or nearly completed at the close of 1941.

The world's fastest and highest-powered cold-strip mill, with a nominal rolling speed of 3,300 feet per minute went into operation early in 1941; maximum speed is 3,850 feet per minute and tinsplate already has been rolled on it successfully at 3,750 feet per minute. This mill is driven by d-c motors totaling 11,400 horsepower, which are fed from an 8,000-kw motor generator set comprising two 4,000-kw d-c generators and a 12,000-horsepower synchronous driving motor. The motors for driving the stands are so compensated that almost perfect speed-regulation is obtained at all speeds, and accurate tensions are obtained at all times. There has been notable activity in rod mills, with a trend toward the continuous type having individual driving motors for the various stands. One mill now under construction will be driven by nine motors totaling 7,650 horsepower, and another by 11 motors totaling 9,350 horsepower.

High-frequency induction heating has scored notable advances in 1941, especially in the armament field. Much of this equipment is being used for heating bars intended for forging into 75 and 105 mm. shells. Typical of these installations is one including five 400-kw 1,920-cycle motor generator sets operating 25 heaters, and three 600-kw sets operating 18 heaters. Other installations use frequencies ranging from 1,000 to 9,600 cycles, the higher frequencies being used principally for surface heat-treating rather than thorough heating. Numerous improvements are reported by manufacturers of combustion controls and instruments, generally resulting in simplification and reduced maintenance. The use of electronic tubes in temperature measuring and control equipment is increasing. One of the most recent applications is a photoelectric flame control for Bessemer converters. An autographic record of the flame intensity is made for the entire blow, but its greatest value is in the detection of the beginning and end of the "after blow." The end of the after blow must be determined accurately within an error of 2.5 seconds, or the product will be impaired.

Aviation. One of the outstanding contributions of the electrical industry to aviation in 1941 was the drive and control equipment for the new 400-mile-per-hour wind tunnel built by the U.S. Army at Wright Field, Dayton, Ohio, which is large enough for testing full-sized propellers and engine enclosures. Two giant fans are driven by a 40,000-horsepower wound-rotor induction motor, said to be the largest of its type. It stands 15 feet high and weighs 125 tons. New instruments included: a remote-control liquid-level indicator which provides the pilot with complete knowledge of fuel in from one to four tanks; a magnetic-drag tachometer which includes an instrument on which the pointer makes more than one revolution, each revolution being equivalent to 100 rpm, and a second scale being marked in 1,000-rpm units; a normal-sized dual indicating instrument normally indicating one quantity, but indicating a second quantity when a button is pushed. Engine-driven d-c generators having greatly increased power-output ratio of kilowatts per pound were produced in large quantities. Specially designed motors having a high ratio of horsepower per pound also were produced in large quantities. A 35-horsepower 18,000-rpm motor built into a frame 4 inches in diameter and 10 inches long was built for aeronautical research. An electrically heated flying suit was designed for flying at high altitudes where temperatures may drop to 60

degrees below zero or lower. Not only is it lighter than the suit it replaces, but it permits the use of electrically heated gloves which give the flier the sensitive touch he needs for operating instruments.

Industrial. The necessity for plant electrical systems to carry the increased loads imposed by expanding defense and war production, and the need for conserving the critical materials that make up such systems led to several developments during 1941. One development that is bound to be of lasting benefit is the increased use of capacitors for power-factor correction. Capacitors now are being made in smaller units for connection at and with the load, and this simple expedient alone has materially increased the load capacity of many plant systems.

The so-called "load center" plant distribution system is another recent development. Instead of stepping down the service voltage (say 13,000 volts) outside the plant and running only low-voltage circuits (say 440 volts) inside the plant, the higher-voltage lines are extended to "load center" units distributed at convenient points throughout the plant where the voltage is stepped down in totally enclosed factory-assembled units. From these units, comparatively short low-voltage lines extend to the utilization equipment. This system has the advantage of flexibility and requires less materials than the more conventional systems. Another system, especially applicable where load-densities are high is the plant secondary-network system. This is a prototype of the secondary-network system that has proved so successful in high-density urban central-station distribution, and has all the advantages of the latter.

In switchgear and control equipment for industrial use the trend toward totally enclosed factory-assembled units continues to grow. Control equipment has been improved in many ways to give longer life, reduced maintenance, and faster operation. Electronic devices are playing an important role. A wide-range adjustable-speed drive using electron tubes as controlled rectifiers was introduced. It provides for controlled acceleration and stepless speed regulation of the motors, and has found application on cloth-finishing ranges in textile mills. Another variable-speed drive, for wide speed ranges, combining the high-torque characteristics of the series motor with the flat speed characteristic of the d-c shunt motor, was brought out. It comprises three machines: a squirrel-cage induction motor driving a series d-c generator which is directly connected to a d-c series driving motor. Speed adjustments are made by varying the resistance connected in parallel with the generator series field.

Welding. The greatly increased use of welding in defense industries was reflected in the spectacular 187 per cent rise in welding-set orders received, as compared with the 1940 level. The year was one of great expansion rather than of new equipment. The lack of new devices resulted not from lack of ingenuity, but from the pressure for shipbuilding, armament, and related fabrication which placed a tremendous load on equipment builders. The year, however, saw some remarkable developments in the application of arc welding, one of the most important being in armor-plate fabrication. One aspect stressed in 1941 was the proper application of equipment to assure minimum power consumption. In the d-c field, this resulted in the use of hundreds of constant-potential multiple-operator welding generators in shipyards. Arc-welding machines have been designed especially for use in aircraft

production, with special emphasis on accurate control of welding current and voltage to assure high-speed high-quality operations.

Resistance welding also scored heavily in 1941, particularly in the aircraft industry. One authority even envisioned a spot-welding machine that would produce "half an airplane at the push of a button." A stride toward increased use of welding in fields where it was not previously particularly successful was achieved by the introduction of new welding alloys. The feature of these is their property of flowing and binding at unusually low temperatures, below the critical transformation points of metals and before the formation of critical stresses.

X-rays. Industrial X-ray developments during the year were of major importance, especially in the war-material industries. Several of the portable 1,000,000-volt units previously described were built and placed in service. This unit is remarkably expediting the examination of heavy castings, welds, pressure vessels, and the like. (See illustration accompanying PHOTOGRAPHY) Lower-voltage X-ray equipment is finding increased use in the greatly expanded wartime production, especially in the examination of airplane engine castings and the lighter castings and welds generally. A new bearing-mandrel cassette for use with the 220,000-volt unit makes it possible to X-ray 20 cylindrical aviation-engine bearings in 10 minutes; previously five hours were required. In the medical field, greater accuracy in tuberculosis examinations is provided by a combination of X-ray apparatus and a photo-roentgen unit with accessories permitting stereoscopic photo-roentgenography. Two stereoscopic exposures are taken simultaneously and are viewed with a special orthostereoscope which brings the chest pattern into perspective as a three-dimensional image. This stereoscopic procedure also is used in industrial radiography.

A mobile ozonator has been developed for water purification that promises to be especially useful for army camps and similar applications. A 10-kva gasoline-engine-driven unit will treat up to 150 gal of water per minute, the ozone produced oxidizing the bacterial content of the water. See also HEATING AND VENTILATING; SHIPBUILDING.

G. ROSS HENNINGER.

ELECTRICAL SAFETY CODE. See NATIONAL BUREAU OF STANDARDS.

ELECTRICAL TRANSPORTATION. See RAILWAYS.

ELECTRIC LIGHT AND POWER. Of all American industry, the electric utility industry as a whole was probably the best able to deliver the full and commanding requirements of the enormous and rapidly expanding national defense program of 1941. The amount of electric power required to meet the needs of American users *increased* during this one year by some 23 billion kilowatt-hours, an amount practically equal to the gross total annual output of the nation at the beginning of the first World War 25 years ago. Industrial power requirements were above those for 1941 by 30 per cent, commercial by 10 per cent, and residential by 7 per cent. Local droughts coupled with the building of enormous defense industries in areas heretofore basically non-industrial created some local shortages of electric power that were acute for a time, but which were relieved by measures ranging from temporary black-outs of all but the most essential local lighting to the emergency construction of interconnecting power lines to enable power to be diverted from areas having relatively more abundant supply. The industry's ability to meet the rapidly growing war-

industry demands for power are bound to be affected by the industry's ability to procure essential materials—turbines, for example, in competition with naval and other war needs.

Power Production. Production of electric energy in 1941 mounted to 168 billion kilowatt-hours and exceeded 1940 by more than 16 per cent, in spite of drought conditions in some areas that severely reduced the hydro-electric output in those areas. Statistical data are given in Table 1.

TABLE 1—ELECTRIC POWER GENERATION
[Billions of Kilowatt-hours]

Year	From fuel	From hydro	From Canada	Gross total	Uses & losses	Available for sale to consumers
1941	115.6	52.4	0.9	168.9	28.5	140.4
1940	97.2	47.8	0.9	145.9	27.3	118.6
1939	86.3	44.0	1.2	131.5	25.8	105.8
1938	71.8	44.8	1.1	117.7	24.1	93.7
1932	49.1	33.3	0.4	82.8	19.1	63.7
1929	62.7	33.2	1.0	96.9	21.6	75.3

Financial. Another new record for gross revenue from the sale of electric energy was established in 1941—\$2,670,450,000. This represents an increase in sales revenue of more than 9 per cent, but in contrast with some 18 per cent concurrent increase in energy sales. Some further rate cuts and heavy sales of energy in low-priced brackets to industries account for the disparity in percentages. The overall industry-wide average price per kilowatt-hour for 1941 was only 1.9 cents, lowest in history. In 1931, the average cost was nearly double this figure—2.74 cents. Taxes accounted for 20½ cents out of every dollar of gross revenue for the year for private utilities, a total of some 510 million dollars and an increase of some 19 per cent for the year. In nine years since 1932 private utilities have experienced an increase of 54 per cent in operating expenses and 153 per cent in taxes against an increase of 44 per cent in gross revenues. Average usage for residential customers for 1941 was 986 kw-hr at an average rate of 3.73 cents, as compared with 950 kw-hr at 3.81 cents in 1940. Selected statistical data concerning customers, sales, and revenues are given in Table 2.

TABLE 2—ELECTRIC POWER SALES AND REVENUE

Customer classification	Urban residential	Rural	Commercial industrial	Totals
New customers 1941	1,020,000	302,000	40,000	1,362,000
Total customers	25,972,000	988,000	4,593,000	31,553,000
Percentage of total 1941 customers	82.4	3.1	14.5	100
Power use in per cent of 1941 total power sales	17.9	1.8	80.3	100
Gross revenue—1941 power sales—Dollars	\$939,058,000	\$63,510,000	\$1,666,882,000	\$2,670,450,000
—Per cent	35.1	2.5	62.4	100

The volume of electric utility financing for the year amounted to about \$740,832,000 of which some \$97,065,000 was new capital and the remainder refundings. Capital expenditures for system extensions and improvements were reported as follows: for fuel power plants, \$219,741,000; for hydroelectric plants, \$27,186,000; for transmission facilities, \$62,476,000; for substation facilities, \$79,218,000; for distribution facilities, \$232,840,000; for miscellaneous items, \$32,687,000; total, \$654,148,000.

Generation. Of the 3,900,000 kilowatts in new capacity for electric generating plants that was pre-

viously scheduled for 1941, some 3,078,375 kw was reported as actually completed during the year. Another 3,600,000 kw is scheduled for 1942, and 3,400,000 for 1943 to meet war needs. Selected statistical data are given in Table 3.

The geographic distribution of electric generating capacity as of the close of 1941 is shown in Table 4.

TABLE 4—DISTRIBUTION IN ELECTRIC GENERATING CAPACITY REPORTED IN ELECTRIC UTILITY POWER PLANTS AT CLOSE OF 1941

Area	No. Plants	Aggregate Capacity (Kilowatts)
6 New England States	327	3,144,000
3 Middle Atlantic States	394	10,297,000
5 East North-Central States	657	9,851,000
7 West North-Central States	823	3,349,000
8 South Atlantic States	408	5,518,000
4 East South-Central States	178	2,247,000
4 West South-Central States	414	2,236,000
8 Mountain States	367	2,318,000
3 Pacific Coast States	304	4,531,000
Totals	3,872	43,491,000

New and highly efficient fuel plants offset the older and less efficient plants brought back into operation to meet war needs, leaving the average fuel economy for 1941 at 1.35 lb. of coal per kilowatt-hour, just about where it was for 1940. All fuels—coal, gas, and oil—consumed for the generation of electric power in 1941 amounted to an equivalent of some 136 million tons of coal as compared with about 119 million tons for 1940. (See POWER PLANTS.)

Transmission and Distribution. More than 9,000 miles of new transmission lines of 11,000 volts or higher were built in 1941. About two-thirds of this amount was accounted for among the 5 East North-Central, 9 South Atlantic, 3 Pacific, and 4 West South-Central States. Tentatively scheduled for 1942 are another 8,800 miles.

New capacity in substations reported totalled 6,222,000 kw in capacity, more than half of which was accounted for in the 9 Middle Atlantic, 5 East North-Central, and 3 Pacific States. Additional capacity amounting to 6,600,000 kw is scheduled tentatively for 1942.

Rural Electrification. By the end of 1941 Rural Electrification Administration reported a total of some 760 systems in actual operation serving an estimated total of 900,000 customers over an estimated total of 350,000 miles of lines. These figures represent a 1941 increase of 28 systems, 120,000 customers, and about 42,000 miles of line. Total public funds allotted to REA to the end of 1941 amount to about \$431,000,000 which have been expended about as follows: for distribution lines, \$393,000,000, for power generation and transmission facilities, \$28,000,000; for consumer facilities, \$11,000-

TABLE 3—ADDITIONS TO ELECTRIC GENERATING CAPACITY

Year	Fuel plants		Total fuel plants		Hydroelectric plants		Total hydro	Grand total		
	Public	Private	No.	Kilowatts	Public	Private				
1941	22	188,000	63	2,104,100	85	2,292,100	17	786,200	102	3,078,300
1940	39	243,000	57	1,210,500	96	1,453,900	17	398,000	113	1,851,900
1939	21	119,750	48	794,930	69	914,680	4	370,150	85	1,284,830
1938						1,350,300		345,600		1,695,900
1934						52,800		41,900		94,700
1929						2,081,300		249,200		2,330,500

000. The number of generating plants operated by REA had grown to a total of 47 with an aggregate capacity of 52,000 kw. These plants produced less than 10 per cent of the 940,000,000 kw-hr of electric energy handled over REA systems for the year, the remainder being purchased. Average annual customer consumption was reported to be 835 kw-hr at an average cost of 4.7 cents per kilowatt-hour. Gross energy losses incidental to transmission and distribution were about 25 per cent. As the year's industrial war efforts grew, REA entered more and more into active competition with established electric utilities for a share of the industrial load, over and beyond its "rural" field. See AGRICULTURE, U. S. DEPARTMENT OF under *Rural Electrification*.

Government. Of interest and special significance in this year of defense and war effort just closed are the diametrically opposite views taken by two different public commissions whose responsibility it is to regulate public utilities in the public interest. One of these commissions—the Massachusetts Department of Public Utilities—announced that, in view of the nation's present crisis which is demanding everything in the way of manpower and service that the utilities can furnish, it would not intervene and interfere at this time by ordering a State-wide investigation—in this instance, of telephone rates—because such could not be said to be genuinely in the public interest for a nation at war. The other commission—the Securities and Exchange Commission, which is working out the much-discussed electric power utility "integration" or "death-sentence" that calls for the disintegration of large interconnected systems into separate small and local units—announced to the industry that war or no war there would be no relenting of efforts to disintegrate holding-company systems. And all this at a time when droughts and war needs have required many emergency interconnections of electric systems to be made to prevent serious interruptions to war industries. Competent students and observers believe that "regulation actually in the public interest" should continue, but that socialization experiments and reforms should not be allowed to interfere with the nation's number one war industry—the electric utility industry, which must produce the power that turns the wheels of all war industries.

First actual order for system disintegration issued by SEC required United Gas Improvement Corporation to divest itself of all interests except those centered in the Philadelphia area. This order was regarded by the industry as being the probable pattern for further SEC orders. Others issued during 1941 affected the properties of Engineers Public Service Company, Commonwealth and Southern Corporation, National Power and Light Company.

The Federal Power Commission was particularly active in the field of power for war industries, having previously drawn up its own plans and prospectuses for dividing the United States into some 48 "power-supply areas" for purposes of control and allocation of capacity and power-producing resources. FPC also was an active and ardent proponent of extensive further developments of electric power by the government—by an RFC subsidiary if necessary.

The FPC's plans for power for war industries came more and more into conflict with the plans of the Office of Production Management (q.v.). As the year came to a close, it was the opinion of many observers that the long-standing battle of the "New Deal" agencies against the electric utilities was in some respects at least resolving itself into a major conflict between two government agencies—over

the electric utility industry as the prize. Observers at year-end were divided in opinion as to whether OPM's relatively new Power Division or FPC would come off second best.

See CONSUMERS' COOPERATIVES; DAMS; MUNICIPAL OWNERSHIP; POWER, DIVISION OF; SUPPLY PRIORITIES AND ALLOCATIONS BOARD.

G. ROSS HENNINGER.

ELECTRIC LIGHTING. See ILLUMINATION.

ELECTRIC TRANSMISSION AND DISTRIBUTION. See ELECTRIC LIGHT AND POWER.

ELECTRON INDUCTION ACCELERATOR, ELECTRON MICROSCOPE. See PHYSICS; also CHEMISTRY, PURE.

ELECTROSHOCK. See SHOCK TREATMENT.

ELEVATED RAILWAYS. See RAPID TRANSIT.

EMBARGO. See ECONOMIC WARFARE, BOARD OF. Also see GERMANY, ITALY, JAPAN and most of the other belligerent countries under *History*.

EMERGENCY MANAGEMENT, Office for (OEM). See NATIONAL DEFENSE AND WAR AGENCIES.

EMIGRATION. See IMMIGRATION, EMIGRATION, AND NATURALIZATION.

ÉMIGRÉ LITERATURE. See DUTCH AND BELGIAN LITERATURE; FRENCH LITERATURE; GERMAN LITERATURE; RUSSIAN LITERATURE.

EMPLOYMENT. See LABOR CONDITIONS.

EMPLOYMENT SECURITY, Bureau of; EMPLOYMENT SERVICE, U. S. See SOCIAL SECURITY BOARD.

EMPLOYMENT TESTS. See PSYCHOLOGY.

ENCEPHALITIS. See PUBLIC HEALTH SERVICE.

ENDERBURY ISLAND. See under CANTON ISLAND.

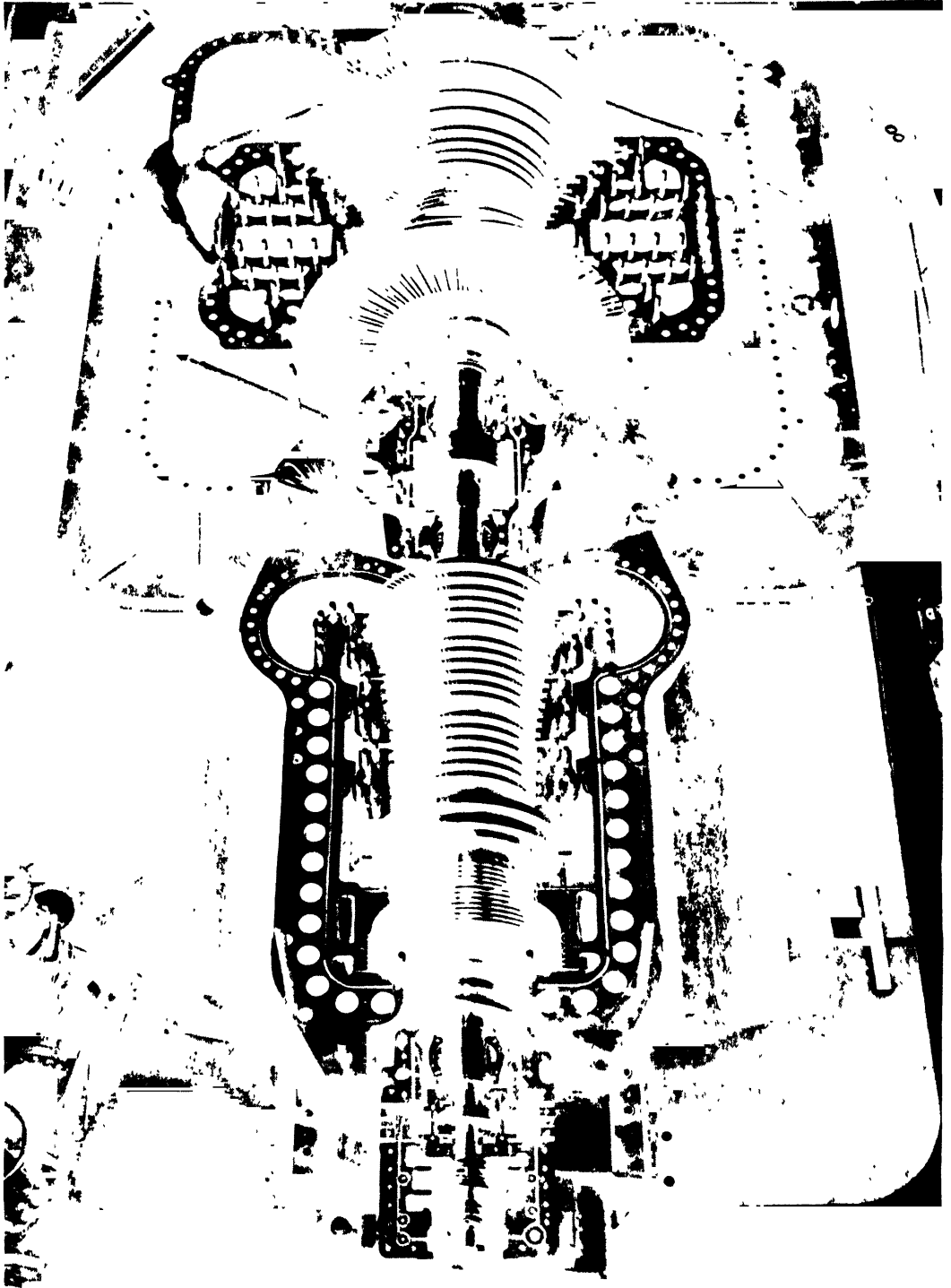
ENDOCRINOLOGY. See BIOLOGICAL CHEMISTRY.

ENEMY ALIENS. By presidential proclamation, the nationals of Germany, Italy, and Japan were designated as "enemy aliens" in 1941. They numbered approximately 1,100,000, of whom 2,971 or only one-quarter of one per cent had been arrested by the FBI at the end of the year—1,484 Japanese, 1,256 Germans, and 231 Italians.

The U. S. government stated that every effort would be made to protect aliens from discrimination and abuse so long as they conducted themselves according to law. They were not permitted to travel by air, however, and were required to file a statement a week in advance of any proposed journey outside their communities (except for commuting to business or to see a government agency). They were also required to surrender to the police all portable cameras, radio transmitters and short wave receivers, and firearms. Aliens considered disloyal were subject to arrest and questioning by the FBI and were then taken into the custody of the immigration authorities. Their cases were heard by *Alien Enemy Hearing Boards*, extralegal organizations created in each Federal judicial district by the Attorney General. Recommendations of these Boards were reviewed by an *Alien Enemy Control Unit*, set up within the Department of Justice under the direction of Edward J. Ennis, being sent to the Attorney General for final action.

Although the Japanese were less numerous than either German or Italian groups (see table under IMMIGRATION) they accounted for the largest number of arrests. According to the 1940 census there were 126,947 Japanese in the continental United States, of whom 47,305 were foreign born, and therefore alien and ineligible for citizenship. The Pacific Coast States of Washington, Oregon, and California had 112,353 Japanese, or 88.5 per cent of the total; 40,869 were aliens. For totals of Japanese by leading States see table on p. 189.

In the territories and possessions of the United States, excluding the Philippine Islands, there were



Westinghouse Photo

BLADES FOR A NEW 50,000-KW TURBINE

Final check-up on thousands of steel blades manufactured by Westinghouse for the Toledo Edison Company. These blades have tip speeds as high as 850 miles an hour. See *ELECTRIC LIGHT*.



National Fire Protection Association

FIGURE

\$14,000,000 loss at the Firestone Rubber & Latex Products Company, Fall River, Mass., where 14,000 tons of irreplaceable crude rubber were destroyed, October 11



FIRE FIGHTING

A typical American-built trailer pumper, equipped with a 500-gallon-per-minute centrifugal pump powered by an 85 h.p. automobile engine. See **FIRE PROTECTION**

158,501 Japanese, of whom 37,512 were alien foreign-born. Most of these were in Hawaii, where Japanese numbered 157,905, or 37.3 per cent of the total population. The Philippine Islands contained 29,057 citizens of Japan according to the Philippine census of Jan. 1, 1939. (The total number of persons of the Japanese race in the Philippines is not known, but all persons of the "yellow race," of whom the majority were Chinese, numbered 141,811.) See UNITED STATES under *Civil Liberties*.

State	Total	Citizens	Aliens
California	93,717	60,148	33,569
Washington	14,565	8,882	5,683
Oregon	4,071	2,454	1,617
Colorado	2,734	1,869	865
New York	2,538	766	1,772
Utah	2,210	1,381	829
Idaho	1,191	765	426

ENGINEERING. See BRIDGES, BUILDING, CONSTRUCTION INDUSTRY; DAMS, ELECTRICAL MACHINERY, FOUNDATIONS, GARBAGE AND REFUSE DISPOSAL, TUNNELS, WATERWAYS, ETC

ENGINEERS, Corps of. See BRIDGES; CONSTRUCTION INDUSTRY; DAMS; FLOOD CONTROL.

ENGLAND. See GREAT BRITAIN.

ENGLISH LITERATURE. See LITERATURE, ENGLISH AND AMERICAN

ENTOMOLOGY, Economic. The Bureau of Entomology and Plant Quarantine is concerned with investigations on insects and their economic relations; the development and application of methods for their eradication or control; the carrying out, in cooperation with the States, of necessary work to prevent the spread and to control or eradicate insect pests and plant diseases that have gained more or less limited foothold in the United States; and the utilization of those species that are beneficial. These activities include investigations on and direction of control campaigns against the species injurious to agriculture and forestry; investigations on the species affecting the health of man and animals, or infesting human habitations or injurious to industries; the culture and use of honeybees and beekeeping practices, investigations on the natural enemies of insects and plant pests and the possibility of using these as aids for control; the taxonomy, anatomy, physiology, and responses of insects; chemical and other problems relating to the composition, action, and application of insecticides; and the development of methods of manufacturing insecticides and materials used with them.

To aid in carrying out these assignments and to protect agriculture from plant pests and diseases, the Bureau is responsible for the enforcement of acts and restrictive orders promulgated thereunder.

Codling Moth. During the year further confirmation was made of the effectiveness of finely divided phenothiazine in the control of codling moth. Xanthone has shown definite promise for codling moth control in the Northwest. In the Middle West, tank-mixed nicotine bentonite for the fourth consecutive year has resulted in the production of more clean fruit than heavy lead arsenate-oil sprays.

Comstock's Mealybug. In some orchards in West Virginia and Virginia this insect caused commercial injury to as much as 81 per cent of the fruit.

A New Scale Insect in Missouri. This insect, *Parlatoria chinensis* (Marl.), was first discovered in a limited area in St. Louis in 1940. Surveys are under way to develop accurate information with respect to the limits of the area involved.

Oriental Fruit Moth. Methods are being developed for the production of large numbers of parasites for liberation very early in the season, and the results of experiments indicate that the parasite when so liberated is usually of considerable value.

Plum Curculio. Favorable preliminary results in the control of this insect were obtained by treating the soil with dichloroethyl ether early in the summer

Grape Berry Moth. The use of calcium arsenate in two applications against the first brood of this moth followed by three applications of processed nicotine bentonite against the second brood gave favorable control.

California Red Scale. Decidedly improved effectiveness of cyanide fumigation against this insect was obtained by the use of a blower to mix the gas with the air within the tent, and to rapidly produce a uniform concentration

Japanese Beetle. The main area of Japanese beetle infestation has continued to increase. Serious damage is now being done from the District of Columbia and adjoining sections of Maryland and Virginia to southern New England and New York, and in a few points in Ohio. Special emphasis is now being placed on work with milky disease that attacks the grubs of this beetle and offers decided promise in the control of this pest when cultured and distributed artificially.

Pear Psylla. Intensive scouting reveals that the pear psylla distribution extends beyond the Spokane Valley in Washington State. The population has been materially reduced and no infestations were found in the important pear-producing areas of the Wenatchee or Yakima Valleys

Phony Peach. Phony peach disease survey showed that whereas this disease was once known to exist in 17 States, it has now apparently been eradicated from Indiana, Maryland, Oklahoma, and Pennsylvania, and greatly reduced in other States

Peach Mosaic. During the fiscal year 1941 no mosaic was found in 14 previously infected counties but was found in five counties from which the disease had not previously been reported. In addition, there was noted a material reduction in the incidence of the disease in many of the infected areas.

Citrus Canker. The most outstanding event in the citrus canker eradication project during the year was the finding of this disease at Corpus Christi, Tex., involving 154 trees. These were the only infected trees found in the United States and were promptly destroyed.

Termites. Increased attention was given to cooperative work with the Army, the Navy, and defense housing agencies in planning and constructing buildings that will be reasonably safe from infestation; 121 defense housing projects were inspected during the early part of 1941

Bark Beetles. Research has developed a method of selective logging of trees susceptible to attack by bark beetles in northeastern California and southeastern Oregon, thus permitting a fuller utilization of the available supply of mature ponderosa pine.

Gypsy Moth. Defoliation was less extensive during the summer of 1940 than during the previous season. No defoliation was reported from any of the towns lying within the barrier zone. The use of the autogiro in spraying infested areas has been found effective.

Corn Breeding to Resist Insect Attack. Three varieties of dent corn were found to be especially promising. Further investigations are aimed at producing a corn resistant to both corn earworm and chinch bug.

European Corn Borer. Significant increases in the abundance of this insect occurred in parts of seven States. Twenty new counties were found to be infested in five States already known to be infested.

Grasshoppers. In general the grasshopper situation was less critical than at any time during the last few years. The lesser migratory grasshopper occurred in outbreak numbers in parts of the northern Great Plains. Areas of heavy infestation of very limited extent occurred in Arizona, Colorado, Kansas, Oklahoma, and Texas.

Mormon Crickets. These insects in the region east of the Rocky Mountains were decidedly less destructive than in 1940. In limited sections of Idaho and Oregon and in a more extensive area in northern Nevada severe outbreaks occurred. The general adoption of sodium fluosilicate bait and the use of airplanes for spreading it permitted extensive and economical control.

White-fringed Beetle. As a result of a cooperative campaign there was a decided decrease in the intensity of infestation by this insect in the limited area known to be infested in the Gulf region. The replacement of dusts by adhesive sprays has increased the effectiveness of insecticidal control.

Legume Weevil. This Mediterranean insect was first discovered in this country in 1939 in Arizona. Surveys conducted in 1940 and 1941 disclosed that the distribution of the insect was apparently restricted to two small areas in Arizona and adjacent California.

White Pine Blister Rust. During 1940 over 69 million *Ribes* plants, which are the alternate host of this disease, were removed from nearly 2 million acres of control area.

Stored-grain Insects. With a view to the present emergency increased attention was given to the preservation of stored grains from attack by insects. Fumigation with ethylene dichloride mixed with carbon tetrachloride and methyl bromide together with the ventilation or turning of the grain gave practical control. Reinfestation of treated corn was effectively prevented by giving its surface a thin coat of a light, tasteless mineral oil. Where fumigation can be carried out under practically airtight conditions, methyl bromide was found highly effective in dosages as low as 1 pound to 1,000 cubic feet of space.

Wheat Resistant to Insect Attack. Varieties of wheat have been developed showing resistance to hessian fly as high as 96 per cent. Efforts are being made to combine hessian fly resistance with resistance to stem rust.

Sugarcane Insects. Large-scale field tests have indicated that cryolite is effective in the control of the sugarcane borer. Burning the sugarcane trash during the fall and winter reduced populations from over 144 borers per acre to 9.6 per acre.

Chinch Bug. Despite heavy populations of chinch bugs in the fall of 1940, heavy rains at frequent intervals in June reduced them considerably. Nearly 286,000 gallons of creosote, however, were furnished Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, and Oklahoma by the U.S. Department of Agriculture in cooperation with these States for the use of farmers in preventing migration from small grain into corn.

Black Stem Rust of Wheat. The program for removal of barberry bushes, which are the alternate host of this disease, has apparently resulted in cutting the average annual loss occasioned by this disease more than in half. During the fiscal year 1941 over 28,600,000 barberry bushes were destroyed.

Stored-Tobacco Insects. Due to the decline in exportation because of war conditions, the problem

of storing tobacco has become acute. Special assignment of an entomologist has been made to advise in the selection of suitable storage houses from the viewpoint of insect control.

Fumigation of Open-Storage Tobacco Warehouses. The use of a gas-proof curtain to seal the walls and sides of warehouses has proved highly effective in fumigating tobacco infested with cigarette beetle and tobacco moth with hydrocyanic acid gas. Cold storage control of tobacco in hogsheads has shown that flue-cured tobacco held at temperatures between 55 and 65 degrees F. give excellent insect control.

Potato Aphids. A spray consisting of derris, peanut oil, and insoluble copper, though not reducing the leaf roll disease, increased potato yield in one instance 77 per cent in Maine.

Beet Leafhopper. In the spring of 1941 leafhopper populations were greater than at any time during recent years. Cool weather delayed these leafhoppers from entering the sugar beet fields, thus preventing much crop damage. A combination of pyrethrum and lime sulphur was found to be effective in protection of young plants from curly-top infection.

Sweet Potato Weevil. A campaign for the suppression of this insect has resulted in its eradication from 1,257 properties in the commercial sweet-potato-growing areas in Georgia, Alabama, Mississippi, and Texas since 1937.

Boll Weevil. Populations were very high early in the spring of 1941. They continued to increase as the season advanced and very heavy damage occurred over a large part of the Cotton Belt.

Pink Bollworm. This insect was materially reduced by a clean-up campaign on more than 400,000 acres of cotton in the lower Rio Grande Valley and adjacent counties in Texas.

Bee Culture. Resistant strains of honeybees to American foulbrood have resulted in the distribution of 232 resistant queens to agricultural agencies in 34 States.

Mosquitoes. During the year members of the Bureau assisted several defense agencies by making mosquito surveys in the vicinity of military camps on the Atlantic seaboard and Gulf coast, by furnishing working plans and estimates covering mosquito control programs.

Secretions of Insects. A new healing agent for purulent wounds, ammonium allantoinate, has been discovered in the secretions of fly maggots. Another healing agent discovered in the secretions of fly maggots and known as Extract K is available for treating osteomyelitis, one of the most serious complications that follows war wounds.

Clothes Moths. A new mothproofing agent has been discovered during the year. Considerable time has been spent in advising the defense agencies of stocks of raw wool, blankets, and stored food. Building and commodity fumigation technique has been demonstrated at cantonments for the benefit of military agencies.

Screwworms. A modified plan of ranch management has been developed to reduce losses from screwworms. The plan involves production of calves and other animals and performing surgical operations on livestock only between certain dates. An effective remedy was developed for destroying the worms in the wounds of livestock and at the same time protecting them from further attack in one operation.

Foreign Parasite Introduction. The foreign investigations on the natural enemies of crop pests were continued throughout the year at the field stations at Yokohama, Japan, and Montevideo, Uruguay,

and the imported material was received and passed through quarantine at the Hoboken, N.J., receiving station. A total of 41 lots of parasite material were received at that station.

Control Investigations. Approximately 2,500 tests were made on about 200 synthetic compounds as stomach poisons to leaf-eating insects. Phthalonitrile, 1, 4-diphenyl semicarbazide, p-aminoacetanilide, and p-aminoazobenzene hydrochloride have been found effective against a number of leaf-feeding insects and to be tolerated in insecticidal quantities by a number of crop plants. Tests on greenhouse insect pests indicate that nicotine and possibly other insecticides, when applied in combination with oleic acids or other wetting agents, may be more effective when dispersed as aerosols.

Application of Insecticides. Methods and apparatus for applying insecticides in an air-blended mixture from an autogiro were tested on a series of mixtures. Approximately 600 acres of mountainous forest land were treated for gypsy moth with air-blended lead arsenate and fish oil this season.

Insecticide Investigations. Emphasis was given to work on normicotine. This substance is known to possess insecticidal powers but heretofore has been obtainable only from certain Australian solanaceous plants. The recovery of considerable quantity from a Maryland variety of tobacco opens a new avenue for investigations of this material. A new, short method of determining the pyrethrins in pyrethrum flowers and investigations on materials which might be added to the pyrethrins to enhance their action are under way. Sesame oil has been found to increase the kill of houseflies in pyrethrum-kerosene sprays. Phenothiazine gained new importance when it was discovered that grinding this material to exceedingly fine particle size renders it much more effective than the usual commercial powdered form.

Transit Inspection. During the fiscal year 1941 nearly 1,500,000 shipments moving by common carriers were examined at 23 points of inspection, resulting in the interception of 2,839 lots of material moving in violation of Federal domestic plant quarantine regulations.

Foreign Plant Quarantines. Last fiscal year 26,867 ships from foreign countries and our off-shore possessions were inspected. On the Mexican border 58,152 freight and passenger cars were inspected and at 25 airports 6,946 airplanes arriving from foreign countries or our off-shore possessions were inspected. In all of this work there were 68,201 lots of foreign plants and plant products intercepted when arriving contrary to our foreign plant quarantine regulations.

See BOTANY; ZOOLOGY under *Insects*.

P. N. ANNAND.

ENTOMOLOGY AND PLANT QUARANTINE, Bureau of. See ENTOMOLOGY, ECONOMIC.

EPISCOPALIANS. See PROTESTANT EPISCOPAL CHURCH, ERITREA. See ITALIAN EAST AFRICA.

ESKIMOS. See ANTHROPOLOGY.

ESPIONAGE. See IRELAND, MEXICO, NORWAY, PANAMA CANAL ZONE, under *History*; FEDERAL BUREAU OF INVESTIGATION.

ESTONIA. A Baltic republic which proclaimed its independence from Soviet Russia Feb. 24, 1918, and was reannexed by the Soviet Union as a constituent republic Aug. 6, 1940. In August-September, 1941, the Russians were driven out by German troops, which remained in occupation of the country. Capital, Tallinn.

Area and Population. Estonia has an area of

18,359 square miles, including internal lakes, and a population estimated on Jan. 1, 1940, at 1,122,000. Living births in 1939 numbered 18,450 (16.3 per 1,000); deaths, 16,940 (15.0 per 1,000). Estimated populations of the chief cities on Jan. 1, 1939, were: Tallinn, 144,978; Tartu, 60,281; Narva, 23,834; Parnu, 21,886.

Religion and Education. About five-sixths of the people are Lutherans and the rest chiefly Greek Orthodox and Roman Catholics. Adult illiteracy was slightly less than 4 per cent in 1940.

Production. Agriculture and dairying support nearly 70 per cent of the population. Yields of the chief crops in 1940 were (in metric tons): Wheat, 76,000; barley, 83,000; rye, 191,000; oats, 148,000; potatoes, 874,300 in 1939; flax, 6,100 in 1939. The leading industrial products are cotton fabrics and yarn, woodpulp (112,000 metric tons in 1939), cellulose, paper, timber, shale oil. On Apr. 1, 1940, there were 56,456 wage earners in manufacturing establishments.

Foreign Trade. Total imports in 1939 were 101,351,000 crowns (107,198,000 in 1938) and exports of Estonian products were 118,217,000 crowns (103,928,000 in 1938). For trade distribution see 1939 YEAR BOOK.

Finance. For the fiscal year ending Mar. 31, 1941, the budget was estimated to balance at 114,988,740 krooni (crowns), as against revenues of 105,878,187 and expenditures of 105,816,637 krooni in the fiscal year 1939-40. The public debt on Jan. 1, 1940, totaled 127,605,613 crowns. The Estonian crown exchanged at an average official rate of \$0.2711 in 1938 and \$0.2538 in 1939 (11 months).

Transportation. At the time of the Soviet annexation in 1940, Estonia had about 1,328 miles of railways, 13,416 miles of roads, and a merchant marine of 195,745 gross tons. The land transportation network suffered severely during the Russo-German war of 1941.

Government. The constitution of Jan. 1, 1938 (see YEAR BOOK for 1940 for basic provisions) was scrapped under Soviet pressure in 1940. Under threat of invasion, the Estonian Government on Sept. 29, 1939, signed a treaty of mutual assistance with the Soviet Union, giving the Russians naval and air bases on the islands of Oesel and Dagoe and at Paldiski (Baltic Port) on the mainland. The preamble of this treaty stated that it was "based on recognition of the independent state of existence and on nonintervention in the internal affairs of the other party." On June 17, 1940, this pledge was violated, when Soviet troops commenced occupation of the entire republic. The government was forced to resign in favor of a pro-Soviet regime, which held elections for a parliament on July 14-15, with only the pro-Soviet slate of candidates permitted on the ballot. The new parliament petitioned the Supreme Soviet in Moscow for incorporation in the Soviet Union and on Aug. 6, 1940, Estonia became a constituent republic of the U.S.S.R. See YEAR BOOK for 1940 for a full description of this process.

History. The German attack upon Russia commencing June 22, 1941, inaugurated a new period of bloodshed and destruction in Estonia. No detailed account of subsequent developments was available but the general trend of events was fairly clear. In Estonia, as in the other Baltic States absorbed by the Soviet Union, the German-Russian war was the signal for a spontaneous revolt against Soviet rule. This was quickly crushed by Soviet troops, with the assistance of a pro-Soviet minority of Estonians. The Moscow radio announced that all Estonian "counter-revolutionaries and German sym-

pathizers were liquidated." Many other Estonians were sent to Russia by Soviet authorities.

After the relatively quick German conquest of Lithuania and Latvia, Estonia became the chief Baltic battleground of the Russo-German war (see EUROPEAN WAR). It suffered immense loss of life and property before the Germans succeeded in expelling the Russians in September. The Germans were at first greeted as liberators by the remaining anti-Soviet elements in Estonia. But Estonian hope that Hitler would permit the restoration of the republic's independence was soon shattered by a series of German actions.

On August 11 Berlin confirmed the appointment of Heinrich Lohse, Governor of Schleswig-Holstein, as Reich Commissioner for the newly-created Ostland Province. This included Estonia, Latvia, Lithuania, and, subsequently, White Russia in the Soviet Union proper. Lohse served under the direction of Dr. Alfred Rosenberg, who was named Reich Minister for all of the territories conquered from Russia. On September 20 the Tallinn radio announced the establishment of a five-man State Council to administer Estonia "in the name of the German military commander." Restoration of private property was a key point in the Council's program.

According to subsequent reports, the German administration in Estonia (as in Latvia and Lithuania) imprisoned members of the hastily organized nationalist regime, who were not prepared to collaborate with the Reich except on the basis of independence. In all three countries, the Germans were said to have registered all persons between the ages of 16 and 60 for compulsory labor service. They confiscated stores of butter, cheese, rubber tires, and other materials needed in the Reich. Strict rationing was established, and each family was required to submit detailed information on the clothes, shoes, and other articles in its possession. Numerous large agricultural estates that had been confiscated under the Soviet regime were placed in the hands of German administrators.

Estonian patriots, who had refused to accept Soviet rule, continued their struggle for the restoration of the country's independence. Estonian diplomatic and consular representatives in the United States announced June 30 that they would not recognize a German-controlled government in Tallinn. They based their hope for Estonia's independence upon the United States and Great Britain, which refused to recognize the Soviet annexation of the Baltic States even after the German attack upon Russia. In July Washington rebuffed a Soviet claim to Estonian and Latvian ships requisitioned by the U.S. Government in American ports when the Baltic States were taken over by Russia in 1940. Some of these ships were employed in transporting supplies from the United States to Britain. Their earnings helped to support the Estonian and Latvian diplomatic and consular representatives in America.

See GERMANY under *History*; WORLD WAR.

ETCHINGS. See ART under *Prints*.

ETHIOPIA. A native empire in East Africa, annexed by Italy May 9, 1936, and reconquered by British Imperial and Allied forces in 1941 (see WORLD WAR). Area, 347,500 square miles; population, estimated at 10,000,000 to 12,000,000. Capital, Addis Ababa. The Emperor Haile Selassie, who was driven into exile by the Italian invasion of 1935-36, was restored to his throne May 5, 1941. See ITALIAN EAST AFRICA for a full description of

Ethiopia and the developments of 1941; also WORLD WAR.

EUROPE. A continent with an area of about 2,094,500 square miles and a population estimated at 400,100,000 (excluding the U.S.S.R.) on Dec. 31, 1938. See separate article on each European country; also BALKAN ENTENTE, COMMUNISM, WORLD WAR, FASCISM, NAVAL PROGRESS, ETC.

EUROPEAN WAR. See WORLD WAR.

EVANGELICAL AND REFORMED CHURCH, The. A denomination formed by the merger in Cleveland, Ohio, on June 26, 1934, of the Evangelical Synod of North America and the Reformed Church in the United States. The former was founded in 1840, by representatives of the Evangelical Churches of Germany and Switzerland. The latter traced its origin chiefly to the German, Swiss, and French Protestants, who settled in America early in the 18th century. Both churches, in doctrine and polity, were akin to the Reformed bodies.

The highest judicatory of the Evangelical and Reformed Church is the General Synod, which meets biennially. A new Constitution was declared in effect at the meeting of the General Synod, held at Lancaster, Pa., in 1940. The officers of the Evangelical and Reformed Church are: President, Rev. Dr. L. W. Goebel, 77 W. Washington St., Chicago, Ill.; First Vice-President, Rev. Dr. George W. Richards; Second Vice-President, Hon. D. J. Snyder; Secretary, Rev. Dr. William E. Lampe, 1505 Race St., Philadelphia, Pa.; Treasurer, Mr. F. A. Keck.

In its combined statistics for the year 1940, the Evangelical and Reformed Church reports a membership of 655,366 in 2,857 congregations. Total expenditures for congregational purposes amounted to \$8,830,349, and total benevolences to \$1,393,751. The Sunday School enrollment is 509,662. For institutions and publications, see YEAR BOOK for 1940.

EVANGELICAL CHURCH. A religious body organized along Methodist lines by Jacob Albright (1759-1808) in Pennsylvania. Headquarters, 1900 Superior Avenue, Cleveland, Ohio, and Harrisburg, Pa. See RELIGIOUS ORGANIZATIONS.

EVER-NORMAL GRANARY. See AGRICULTURE, U.S. DEPARTMENT OF under AAA's *Wartime Job*.

EXCESS PROFITS TAX. See TAXATION.

EXCHANGE CONTROL. See BANKS AND BANKING; ARGENTINA, BOLIVIA, CANADA, CHILE, MEXICO, PERU, URUGUAY, VENEZUELA, and other countries under *History*.

EXPEDITIONARY FORCES. See WORLD WAR.

EXPENDITURES. See PUBLIC FINANCE; articles on countries and States under *Finance*.

EXPERIMENT STATIONS. See AGRICULTURE; AGRICULTURE, U.S. DEPARTMENT OF.

EXPLORATION. See SOCIETIES under *Geographical and Geographic*.

EXPLOSIVE RIVET. See MACHINE BUILDING.

EXPLOSIVES. See BOMBS; CHEMISTRY, INDUSTRIAL; MINES, BUREAU OF.

EXPORT CONTROL, Office of. See ECONOMIC WARFARE, BOARD OF.

EXPORT-IMPORT BANK OF WASHINGTON (EIB). Created as an agency of the United States on Feb. 12, 1934, for the purpose of financing and facilitating trade between the United States, its territories, insular possessions and foreign countries. By an act ap-

proved Jan. 31, 1935, and amended from time to time, the Bank will be continued as an agency of the United States until Jan. 22, 1947, or such earlier date as may be fixed by the President by Executive order. The latest amendment expanded the activities of the Bank by authorizing it to use not to exceed \$500,000,000 outstanding at any one time for loans to assist in the development of the resources, the stabilization of the economies, and the orderly marketing of the products of the countries of the Western Hemisphere. The Bank has a total lending authority of \$700,000,000.

From its creation to the end of 1941 the Bank had authorized loans of \$837,705,261, as compared with \$654,780,863 at the end of 1940. Actual disbursements in 1941 amounted to \$116,835,507 as compared with \$95,298,476 in 1940. Loans outstanding at the close of 1941 were \$186,130,456 against \$131,031,867 in the previous year. Nineteen hundred forty-one net earnings were \$7,216,129 as compared with \$3,774,591 in 1940.

During 1941 the Bank's activities related almost exclusively to inter-American trade and the development of the resources of the countries of the Western Hemisphere. Further loans to assist in the improvement of Latin-American transportation systems, both railway and highway, became of special importance as a part of the program to increase the delivery of strategic materials required in the United States.

See BRAZIL, CHILE, COLOMBIA, COSTA RICA, CUBA, DOMINICAN REPUBLIC, ECUADOR, HAITI, NICARAGUA, PARAGUAY, URUGUAY, and VENEZUELA under *History*; ROADS AND STREETS.

WARREN LEE PIERSON.

EXPORT LICENSES. See ECONOMIC WARFARE, BOARD OF; UNITED STATES under *Defense*.

EXPORTS. See TRADE, FOREIGN, and articles there referred to.

EXPOSITIONS. See FAIRS, EXPOSITIONS, AND CELEBRATIONS.

EXTENSION SERVICE. See AGRICULTURE.

FACTORIES. See INDUSTRIAL BUILDINGS AND PLANTS.

FACTS AND FIGURES, Office of (OFF). The Office of Facts and Figures, established on Oct. 24, 1941, as part of the Executive Offices of the President, was originally assigned the task of encouraging and systematizing the circulation of information about the national defense effort. It was to do this by working through the existing government publicity agencies. With the attack by Japan on December 7, the OFF became the over-all agency for acquainting the public with all information about the war effort which could be released without giving aid to the enemy.

In World War I the United States created the Committee on Public Information of which George Creel was the directing head. News was cleared through the Committee on Public Information. The policy of this Administration, however, is that the news about national defense, and subsequently news of the war, should continue to be issued by the various government agencies concerned.

This method required the existence of a new agency which would see the defense effort in its entirety, and would be equipped to lay down consistent policies. The need for such an instrument developed in the summer of 1941. For a time, the Office of Facts and Figures was part of the Office of Civilian Defense (q.v.). Then the President ordered that it should be a separate body and appointed Archibald MacLeish as Director.

The Office of Facts and Figures, in the words of the executive order creating it, is an inter-departmental clearing house "for the most coherent and comprehensive presentation to the nation of the facts and figures of national defense." The first necessity was establishment of close relationships with branches of the government concerned with defense. For this and other purposes there was created the Committee on War Information, an advisory body provided for in the executive order creating the Office of Facts and Figures. Archibald MacLeish is chairman. Members include high-ranking executives in the State, War, Navy, Treasury, and Justice Departments, OEM, OCD, and other departments and war agencies. The Committee on War Information meets weekly for discussion of war information policy problems. Its decisions are referred to the various agencies through the Office of Facts and Figures.

The Office of Facts and Figures has been named by the President as the agency to coordinate all Government requests for radio time. It has a staff which studies public opinion and a section which maintains contact with such media as newspapers, magazines, and organizations. A small staff of writers and research workers has been assembled to prepare, from time to time, reports on the war effort which are broader in scope than can appropriately be handled by a single government agency. One such was the "Report to the Nation," a 62 page pamphlet describing the progress of war preparations up to Dec. 31, 1941.

ARCHIBALD MACLEISH.

FAIRS, EXPOSITIONS, AND CELEBRATIONS. There were no great world's fairs in operation during 1941 like the two of the two preceding years at San Francisco and New York, and plans for future ones, notably the proposed Rome Fair for 1942, were suspended. However, one new sort of exposition, characteristic of the times, made its appearance—the National Defense Exposition held at Grand Central Palace in New York City from September 20 through October 18. Promoted by a committee of 40 prominent New Yorkers under the chairmanship of George A. Sloan, Commissioner of Commerce for New York City, the exposition was planned to present a comprehensive picture of industrial and commercial activity for national defense, to educate the public on the subject, and to offer opportunity to manufacturers to show how they were cooperating. Exhibits were set up by the U.S. Army, Navy, Marine Corps, and Coast Guard, the New York City Police and Fire Departments, and a large number of individual manufacturers. The presence of actual armored equipment, and liberal use of sound effects and working models, gave vividness and reality to the exhibits. Proceeds went to the United Service Organizations and the Office of Civilian Defense.

The 150th anniversary of the final ratification of the Bill of Rights, falling as it did, on December 15, shortly after the United States became involved in war, was the occasion for patriotic gatherings of more than usual significance. The nationwide event of the day was the broadcasting of a radio hook-up between New York, at the site of the old Federal Hall where the Bill of Rights was passed by the first Congress, and Richmond, Va., where the Virginia Legislature made the final ratification. The governors of those two States were principal speakers.

The State of Vermont observed its sesquicentennial during the year. The featured program, at Montpelier on August 30, was attended by a num-

ber of visiting governors and other officials, who gave to the occasion a political tinge. The city of Stamford, Conn., observed the 300th anniversary of its founding in a two-weeks celebration, featuring a governors' parade on June 14, a pageant, and an industrial exhibition.

Among national "birthdays" the celebration of Switzerland's 650th on August 1 was outstanding. The country was decked with flags, and fires were lit in the capital cities of the cantons with torches carried from a central pyre. The day's pageants centered on the theme of national unity and the chief speech was delivered by Gen. Henri Guisan, who proclaimed Switzerland's resolve to safeguard its liberty. China also celebrated an anniversary, the 30th year of the founding of the Republic, on October 10. The centenary of the cession of Hong Kong to the British by China, however, passed virtually unmarked as a result of what the *London Times* described as "a proper regard for Chinese susceptibilities."

Those of the European trade fairs which were again held, like the famous one at Leipzig, were marked chiefly by efforts to effectuate German propaganda. The customary annual national fairs in Latin America likewise took color from international events, emphasizing inter-American exchange of goods; United States firms were particularly urged to participate. The Canadian National Exposition, at Toronto in August, featured a display of relics of famous British buildings that had been bombed.

Several leading educational institutions commemorated milestones with the customary academic formalities and meetings of scholars. The University of Chicago on September 22 and Stanford University on October 1 marked their fiftieth anniversaries. Fordham University climaxed its centenary year with a three-day celebration starting September 15. Rutgers University also staged a three-day celebration, beginning October 8, the 175th anniversary of its founding. See ART; EDUCATION under *Celebrations*; MUSIC; PHILANTHROPY; PHILOSOPHY; ROMAN CATHOLIC CHURCH, SWISS LITERATURE.

FALANGE ESPAÑOLA. See CUBA and SPAIN under *History*; FASCISM.

FALKLAND ISLANDS. A British crown colony in the South Atlantic, 480 miles northeast of Cape Horn, South America. Area, 4,618 square miles; population (1939), 2,425. Capital: Stanley (on East Falkland), had 1,300 inhabitants. The chief occupation of the people is sheep farming. Small quantities of oats and potatoes are grown. Trade (1939): £93,995 for imports and £198,942 for exports (wool, 3,794,664 lb., £176,197). Tallow, sheepskins and hides, and seal oil are other exports. Finance (1939): £61,905 for revenue and £70,759 for expenditure. The administration is headed by a governor, assisted by an executive council and a legislative council. Governor and Commander-in-Chief, Allan Wolsey Cardinal (appointed Feb. 8, 1941).

Dependencies. These include all islands and territories between 20° and 50° W., south of 50° S., and between 50° and 80° W., south of 58° S. The chief divisions are South Georgia (1,450 sq. mi.; pop. 750, including 7 females, in 1939), South Shetlands, South Orkneys, South Sandwich Islands, and Graham Land. Whaling is the chief industry. During 1938-39, 1,675 whales were caught and 179,875 bbl. of whale oil were produced. Guano output (1939): 124,789 tons. Reindeer have been introduced and are thriving. Trade (1939): £294,128

for imports and £469,534 for exports. Finance (1939): £13,738 for revenue, the surplus (after paying administrative expenses at Stanley) being devoted to local research and development. The administrative authority is vested in the governor and the executive and legislative councils of the Falkland Islands.

FARM CREDIT ADMINISTRATION (FCA). See AGRICULTURE, U.S. DEPARTMENT OF.

FARMERS COOPERATIVES. See AGRICULTURAL COOPERATION.

FARMS AND FARMING. See AGRICULTURE and the topics there referred to.

FARM SECURITY ADMINISTRATION (FSA). See AGRICULTURE, U.S. DEPARTMENT OF.

FAROE ISLANDS. A group of 21 islands (the chief being Bordo, Kalsø, Osterø, Sando, Strómø, Suderø, Vaagø, and Viderø) north of Scotland, forming a county of Denmark, but under British military protection since Apr. 10, 1940. Total area, 540 square miles; population, 25,744. Capital, Thorshavn (on Strómø), 3,200 inhabitants. The chief exports are fish, whale oil, woolen goods, lambskins, and feathers. The islands are administered by a Danish governor and the local parliament (Lagting).

FASCISM. The triumphal march of world fascism was slowed in 1941 by Soviet Russia's stubborn resistance to the German invasion, the growing power of Britain and her Allies, and the entrance of the United States into the world conflagration. Nevertheless, substantial gains were registered. Japan's entrance into the war on the side of the Axis threatened to spread the Nipponese variety of fascism throughout the Far East and the islands of the Pacific. Bulgaria was drawn more firmly within the Axis fold. Yugoslavia and Greece were subjugated and their pro-democratic and anti-Axis elements crushed or driven into exile.

Democratic Finland was driven into tacit alliance with Germany through the aggressive policies of Communist Russia, thus strengthening the pro-Fascist minority in the Finnish republic. Under relentless pressure from Germany and the Pétain Government, France fell increasingly under Fascist influence. Hungary and Rumania, joining in the war on Russia, linked their regimes and their political futures more closely to the Axis.

Anti-Comintern Pact Extended. The Fascist International, launched by Hitler Nov. 25, 1936, through the conclusion of the German-Japanese Anti-Comintern Pact, had been disorganized by the Hitler-Stalin non-aggression accord of Aug. 24, 1939. The German attack upon Soviet Russia in 1941, proclaimed as a crusade against bolshevism, enabled the Reich Government to revive and extend the international anti-Communist movement. Thirteen Governments signed the Anti-Comintern Pact when it was extended for another five years at a ceremony in Berlin on Nov. 25, 1941. Besides Germany and Japan, the Governments renewing the pact were Italy (which adhered originally Nov. 6, 1937), Hungary (adhered Feb. 24, 1939), Spain (adhered Mar. 27, 1939), and Manchoukuo. Governments adhering to the pact for the first time on Nov. 25, 1941, were Bulgaria, Croatia, Denmark, Finland, Rumania, Slovakia, and the Nanking Government in China.

At the Berlin ceremony, representatives of the contracting governments endorsed the aim of the Anti-Comintern Pact and agreed "to lend mutual aid and cooperation in the extermination of the Red peril and its agents at home and abroad." Six of

these Governments, however, were not at war with the Soviet Union. All of the 13 signatories represented Fascist or pro-Fascist regimes except the spokesmen for Denmark and Finland. The Danish Government acted under compulsion, the Finnish Government because it had linked its military and strategic interests with those of the Reich. Missing from the roster was the pro-Fascist Vichy Government in France, which nevertheless officially endorsed Hitler's anti-Communist "crusade" in Russia and encouraged the recruitment of French volunteers for service with the Germans on the Russian front.

German diplomacy utilized the Anti-Comintern Pact as an instrument of warfare in the struggle with the democratic powers. Addressing the representatives of the anti-Communist powers, Foreign Minister Joachim von Ribbentrop declared that although the Axis armies were destroying the Moscow stronghold of communism, the anti-Comintern bloc faced an equally important task of eradicating the "germ cells" of communism in other countries. The Anti-Comintern Pact was described as a "corridor to the Tripartite Pact," the military alliance between Germany, Italy, and Japan. The Axis partners thus made plain their intention to use the Anti-Comintern Pact in enlisting all of the anti-Communist powers in the military struggle with both Russia and the Allied democracies. There were reports that the Anti-Comintern accord signed at Berlin contained secret clauses pledging the signatories to military collaboration under certain circumstances.

Throughout the occupied countries of Europe, the Axis powers continued their efforts to eliminate the remnants of democratic institutions and to win the inhabitants over to Fascist principles and methods. As described in the separate articles on each country, this campaign everywhere encountered stubborn resistance. There was also a revival of anti-Fascist activity by the underground Communist movement throughout occupied Europe and even in the Axis countries after the outbreak of the German-Russian war (see COMMUNISM).

Latin America. Nazi, Fascist and Spanish Falangist propaganda in the Latin American countries encountered more formidable opposition than in previous years. This was due partly to the further clear revelation of the revolutionary aims of the Fascist totalitarian dictatorships in Latin America and partly to effective counter measures by the United States. Plots for the overthrow of the existing governments and the installation of pro-Nazi regimes committed to cooperation with the Axis were uncovered in Argentina, Bolivia, and Chile during 1941. After these conspiracies were crushed, the governments in each case undertook investigations that revealed extensive and well-organized preparations, principally among the German colonies but with the cooperation of some pro-Fascist native elements, for the seizure of power. See ARGENTINA, BOLIVIA, CHILE, and COLOMBIA, under *History*.

These revelations provoked a general revulsion against the Axis powers that was furthered by the subsequent numerous executions of hostages in German-occupied countries of Europe. The executions in France, with which the Latin American countries had close cultural ties, provoked widespread indignation. Led by Chile, a dozen Latin American governments formally protested to Berlin against these atrocities. The Catholic Church in Latin America, while hostile to cooperation with the Soviet Union, refused to recognize the German claim that the Reich was defending European

Christian civilization against bolshevism. Speakers at the international Catholic Youth Congress in Bogotá, Colombia, in July warned that "Nazi paganism" was the most immediate danger to the Christian spirit in Europe.

The United States contributed effectively to the weakening of pro-Fascist and anti-democratic activities in Latin America by a coordinated diplomatic, economic, and cultural campaign (see PAN AMERICANISM). Its most potent weapons were the confidence aroused in Latin America by the "good neighbor" policy; the loans and other financial-economic assistance extended to every Latin American country, particularly by the Export-Import Bank of Washington (q.v.); and the blacklisting of pro-Axis individuals and firms in Latin America.

During the first part of 1941 hundreds of pro-Axis representatives of United States exporting firms were dismissed at Washington's instigation, thus cutting off an important source of revenue for anti-American propaganda. Beginning on July 17, the U.S. Government issued a series of lists of pro-Axis and anti-American individuals and firms in Latin America to whom the exportation of articles and materials from the United States was prohibited as "detrimental to the interest of national defense." Since United States manufactures were virtually the only ones available, this dealt a severe blow to Axis nationals and their Latin American collaborators.

As a result of these various developments, the governments of Argentina, Bolivia, Brazil, and Uruguay agreed to cooperate in exchanging information on Nazi activities. Steps were taken to curb Axis propaganda in virtually every Latin American country. Axis consulates were closed in Cuba, Mexico, and most of the Central American republics. After Japan, Germany, and Italy declared war on the United States in December, all of the Central American and Caribbean republics entered the war on the side of the United States. The other Latin American republics either severed diplomatic relations with the Axis powers or opened their harbors and airports to the United States defense forces.

Thus the end of 1941 found fascism on the defensive throughout most of Latin America. However in many of these republics native totalitarian influences remained strong, especially in the armed forces. In Argentina, Brazil, and some other countries, there was serious danger of army coups that would bring anti-democratic and pro-Axis governments to power.

United States. The U.S. Government also initiated a drive to root out Axis propaganda activities at home. In March the Federal authorities indicted the German-controlled Transocean News Service and its two chief editors for failing to register under the Foreign Agent and Registration Act of 1938. The agency was convicted and fined \$1,000 on July 25. A District of Columbia court on July 11 convicted Friedrich Ernst Auhagen, former Columbia University professor, on a similar charge. He was sentenced to serve eight months to two years in prison and pay a fine of \$1,000. The Government charged that Auhagen formed the American Fellowship Forum as a blind to disseminate Nazi propaganda. On October 8 George Sylvester Viereck, famous pro-German propagandist of World War I, was arrested in New York on charges of withholding information concerning his propaganda activities from the State Department. He was registered as a publicist for German interests.

In June the Federal Government closed German and Italian consulates, the German Library of In-



NECKLINES

Cowl—Classic Notch—Dickey—High Surplice—Cleric Cardigan

formation, and various other Axis propaganda agencies in the United States which were active in creating opposition to the Administration's foreign policy. The Dies Committee continued its revelations of Axis activities. In December it reported that preliminary investigations showed an influx of German-Americans connected with Nazi "front" organizations into the isolationist America First Committee. Nearly 12 per cent of the 11,000 members of the German-American Alliance of Chicago were found to be enrolled members of the America First Committee.

On January 31 nine national leaders and associates of the German-American Bund were sentenced to 12 to 14 months in State prison at Newton, N. J., on charges of violating the State's "race hatred" law in speeches at the Bund's Camp Nordland the previous June. On May 30 Camp Nordland was closed by State authorities as a nuisance, and early in June the State Legislature voted unanimously to revoke the charter and incorporation of the German-American Bund Auxiliary, owner of the camp. When the Bund sought to evade this action by transferring ownership of the Camp Nordland to 217 individual members, the State Assembly passed a bill authorizing confiscation of property owned and used by persons advocating overthrow of the government or engaging in subversive activities. The State then took possession of the property. On December 5 the State Supreme Court freed the nine Bund members convicted January 31, holding that the "race hatred" law violated the free speech provisions of both the Federal and State Constitutions.

A few hours after John Arena, editor of a Chicago Italian-language newspaper, gave information to the Dies Committee on Italian Fascist activities in the United States he was assassinated (April 15). Chairman Dies then revealed that a number of the Committee's witnesses and informers had been "subjected to physical injury and intimidation." As

a result of investigations by the Dies Committee, the Federal Bureau of Investigation, and other agencies, a large number of individuals suspected of pro-Axis activities or sympathies were dismissed from positions in factories working on war orders and from other defense establishments. When Japan, Germany, and Italy declared war on the United States in December, several thousand Axis nationals were immediately rounded up and interned. Offices of the German-American Bund and the German-American Business League in New York City were closed. The House of Representatives on December 19 passed a bill requiring these two organizations to register at the Department of Justice and identify for public record their officers, directors, and members. Fourteen members of a German spy ring were convicted in a Brooklyn, N. Y., U. S. District Court on December 12 of espionage and failure to register as German agents.

Entrance of the United States into the war adversely affected native Fascist movements and publications. William D. Pelley's anti-Semitic magazine, *The Roll Call*, suspended publication December 14.

See also BELGIUM, BULGARIA, COSTA RICA, EGYPT, FINLAND, FRANCE, GERMANY, GREAT BRITAIN, GREECE, HUNGARY, ITALY, JAPAN, NETHERLANDS, PARAGUAY, RUMANIA, SPAIN, under *History*, UNITED STATES under *Unity*, COMMUNISM.

FASHION EVENTS. The unsettled condition of the world was mirrored in the fashion picture of 1941. Completely cut off from the stimulus of Europe for the first time American manufacturers and designers stood alone, but early in the year defense work hampered and retarded production to the point that originality and innovations became almost impossible. The fashion developments of the year finally resolved themselves into a program of classicism and revival. See **GARMENT INDUSTRY.**

However, new influences were brewing which in



WAISTLINES

Long Middy—Jewel Studded—Tucked and Molded—Swathed—Peplum

Courtesy of Bloomingdale's, New York



SHOULDERS AND SLEEVELINES

Dropped Shoulder—Jewelled Cuff—Jewelled Shoulder—Mandarin Sleeve—Dolman

time must have an important effect on American fashion. There was an influx of cultured and wealthy refugees, of important artists, painters, sculptors, designers. Thus, though the fashion history of the year was singularly uneventful, the promise for the future is brilliant. The talent of the world is now centered in America and here, too, are women with the taste and time and money to wear fine clothes. These are the essential ingredients of creative fashion.

Perhaps the most unusual fashion events of the year were, first, the gathering of department store and specialty shop buyers to attend a showing of the collection of California designers held on the West Coast in the spring. Purchases were heavy. The second was the organization of the Dress Institute in New York City. This organization consists of a group of apparel manufacturers whose desire it is to publicize the fashion importance of a New York label in ready-to-wear. They launched an extensive advertising campaign through newspapers and magazines.

The visit of the Duchess of Windsor, famed creator of style trends, occurred in the early fall but failed to leave any noticeable new impress on fashion, though her origination of a simple basic dress worn with elaborate jewelry continued to be the most widely favored of styles. As a result the poorest paid servant will scarcely be seen with a naked lapel.

Retail buying trends became more pronounced in the pattern adopted during the past few years. The manufacturers of ready-to-wear apparel who established factories in the Middle West and those operating on the West Coast, continued to maintain their importance to the regret of the needle trades of New York City who are eager to hold this business. But it is now estimated that 75 leading stores bought 10 per cent of their merchandise in Chicago, while buyers in cities of 15,000 and less, finding the trip to New York too expensive,

concentrated their buying in five cities—Chicago, St. Louis, Dallas, San Francisco, and Los Angeles.

Fashion Organizations. The Fashion Group, a non-commercial organization of professional women, organized in New York now has eight regional groups located in principal cities throughout the United States and a total membership of about 980. Luncheon meetings are held monthly at which various phases of fashion are discussed by prominent speakers. The purpose of the Fashion Group is to "advance the principles of applied art in industry and to foster good taste in fashion; to encourage the cooperation of those engaged in conceiving, designing, and executing fashions, and through proper education and the dissemination of useful information, to inspire a keener interest in fashions to the end that those engaged in the field of fashion may better serve themselves and the public at large."

Fashion Developments. For the first time in fashion history, American manufacturers stepped into the field of creating instead of merely adapting foreign fashions. In the spring sloping shoulders took the preference over padded ones that had for so long been in vogue and this trend became more pronounced as the year progressed. The dolman sleeve was revived, but was not widely welcomed. Necklines plunged downward, and skirt hems which began to be uneven during the summer reached the ankle-bone by winter for dancing costumes, but remained as short as ever for sportswear. However, this development indicates a trend that may become more pronounced during the coming year. The bouffant skirt with basque blouse was most popular for formal wear, and the dirndl gathered even more devotees. There was a revival of many World War I fashions—the peplum, the draped skirt, the middy-blouse, the two-piece dress, and of sequins, beaded trimmings, with emphasis on jet.

Textiles echoed our sympathy with China. There was an extensive promotion of silk and rayon yard



SKIRTLINES

Tunic—Pleats—Dirndl—Harem Drape—Tiers

Courtesy of Bloomingdale's, New York

goods printed with Chinese motifs which were sold for the benefit of that war-ridden nation. Shantung staged an important return. Taffeta and cotton came into increased favor, but rayon and wool held their own. In ready-to-wear apparel pure silk (except shantung) became almost unheard of save in the luxury brackets and there it appeared less often. On the whole, textiles showed much less variety in texture, color, and design as defense activities retarded production. The use of poor quality materials by apparel manufacturers of ready-to-wear and many sales of quality yard goods created a more than usual popularity for the dress-maker.

The color spectrum was all inclusive, with purple tones enjoying a brief vogue in the spring and various shades of red taking center-stage for the majority of the months. Navy was more than usually popular and yellow gained some ascendancy in the spring and summer. There was an endeavor to promote a Latin-American shade of sharp pink under various titles, both historic and naughty. The monotone costume gained followers in the luxury brackets through fall and winter and showed a tendency to continue into the new year and increase in acceptance.

Sportswear unquestionably showed the greatest originality and fine taste in material, design, and tailoring. For beach wear the slogan might have been "the less suit the more sun." The bared midriff was practically unanimous. For winter sports, particularly skiing, costumes combined practicality with charming imagination and color selection. The Southwest, the Hawaiian, the Latin-American influence was obvious in colors and motifs.

The reefer and the short boxy, mannish sport coat continued in popularity, while China devotees reinstated the Coolie Coat in more expensive fabrics and in fur. But 1941 was definitely a suit year with tweeds and gabardines strongly in favor. Collegians became more enthusiastic over "men's wear" fashions, even to doing their shopping for jackets, sportswear, and even underwear in the men's shops of department stores. Jackets, sweaters, skirts, with a good "date dress" of velveteen, rayon, or sheer wool, and a "formal" comprised the usual wardrobe of the Collegian—with a fur coat added if weather required. Flower hats held favor throughout the year but the summer saw great preference for caps and cartwheels, with high built turbans holding first place from the year's beginning to end. Veils were everywhere, and plumes and fur trimming appeared occasionally when the fall and winter set in.

The cosmetic picture was painted in even darker colors than the previous year. Lipsticks in deep South American shades were presented in the spring but were heightened to magenta in the fall. The demand for fancy-formed perfumed soap and bath luxuries increased even above the previous year, and the 10 per cent federal tax levied on all cosmetics did not lessen the demand. With the curtailment of silk importation several cosmetic firms presented a preparation to paint the legs in lieu of stockings, but scored little success as the need was not yet come. Novelty packages of cosmetics for gifts were more numerous and amazing than ever before and were eagerly purchased despite taxes. Everywhere cosmetic shoppers were heard to say they were having one last fling before war frugalities set in, though the cosmetic business is one that has always flourished in time of war.

In August hoarding began. Announcement of a discontinuance of silk imports sent crowds rushing to stores to buy silk stockings and silk underwear.

This furore lasted about ten days, then quieted. But, in the stores handling more expensive apparel the sales of quality materials and better clothes of classic design continued brisk through September and October. Purchases of corsets, brassieres, and shoes were high from fall through the balance of the year indicating hoarding of rubber and leather goods. Hoarding of metal lipsticks and compacts began as war priorities threatened the metal supply.

The last week in September, sales reached a phenomenally high peak, forced upward by the fact that federal taxes on luxury merchandise—jewels, silver, toilet preparations, fur, luggage, et cetera, were to go into effect October 1. Notwithstanding the tax, sales on these luxury articles, amazingly so on jewelry, continued to be good until December. The demand for more and bigger jewelry, real or simulated, was unanimous throughout the year. Buying of fantastic costume jewelry reached new heights as rumors of war priorities threatened the use of metals for any but defense purposes. Many war activities used jewelry in the form of pins and compacts for propaganda.

America's declaration of war on Japan and the Axis set an immediate damper on sales, especially in coastal towns. The demand for formal wear, usually brisk previous to the holidays, slumped but the year closed on a note of resolute brightness. Taking the cue from the women of Britain, Russia, and China, who had retreated behind dull clothes and then cast them aside as being agents of the defeatists, fashion originators agreed not to promote drab clothes. The public realized that patriotism called for gaiety rather than a descent into gloom. There was an upsurge in the demand for gay colored daytime dresses—bright green, red, gold. The American women resolved to eat to be fit, dress to be gay, make-up to look lovely, as a brave gesture to build morale.

CATHARINE OGLESBY.

FATS AND OILS. See CHEMISTRY, INDUSTRIAL; DAIRYING; GARBAGE; LIVESTOCK.

FBI. See FEDERAL BUREAU OF INVESTIGATION.

FA. Farm Credit Administration. See AGRICULTURE, U.S. DEPARTMENT OF.

FCC. Federal Communications Commission.

FEDERAL BUREAU OF INVESTIGATION (FBI). As the black smoke of a world at war rolled higher in international skies during the year 1941, the duties and responsibilities of the Federal Bureau of Investigation increased manifold. To keep abreast of the great increase in its work due to national defense matters, the FBI has tripled its personnel. Since early in the year 1939, thirteen new field offices have been opened in cities of strategic national defense importance throughout the United States and its territories. In the fiscal year ending June 30, 1941, a total of 68,368 matters pertaining to national defense were received as against 18,885 in the fiscal year 1940.

Newly appointed Special Agents must be between the ages of 23 and 35, and graduates of accredited law schools or recognized accounting schools with three years' commercial accounting or auditing experience. Applicants are considered who have academic degrees and extensive investigative experience or a working knowledge of a foreign language.

The FBI was designated by the President in 1939, to serve as a clearinghouse and coordinating agency to handle law enforcement activities in connection with national defense matters. The FBI

Law Enforcement Officers Mobilization Plan for National Defense was immediately placed into operation. At the 1,034 conferences held during the last fiscal year dealing with investigative problems arising out of national defense cases, 30,372 representatives of over 7,000 key law enforcement agencies attended. Weekly conferences between officials in charge of Military Intelligence, the office of Naval Intelligence and the FBI have resulted in close cooperation and the solving of mutual problems.

While 412 convictions were secured in national defense cases during the year, in handling its national defense program the FBI considers preventive measures as the most effective means of providing internal security for the nation. Since September, 1939, the FBI has conducted plant surveys of key factories designated by the Army and Navy as being vital to national defense. The year 1941 witnessed the completion of 1,359 surveys, the sole purpose of which is the prevention of sabotage and espionage.

The investigative activity of the FBI resulted in 6,182 convictions during the year, more than in any former fiscal period. Convictions were secured in 96 per cent of the cases investigated by the FBI which were brought to trial during the year. Sentences imposed as a result of the 6,182 convictions totaled 5 life, 16,648 years, 11 months, and 6 days. Savings, fines, and recoveries resulting from the cases amounted to \$8,650,272.29. Special Agents of the FBI located and apprehended 2,633 Federal fugitives from justice during the year. In addition, 7,102 fugitives were located for State, county, and municipal law enforcement agencies when their fingerprints were identified by a search through the fingerprint files of the FBI.

Alleged violations of the Selective Training and Service Act are within the investigative jurisdiction of the FBI. In this type of case, 226 convictions were secured during the year with the imposition of sentences totaling 351 years and 15 days. Since the Federal Kidnaping Act was passed on June 22, 1932, 204 cases of kidnaping and conspiracy to kidnap have been investigated by the FBI. All but two of the cases have been solved and they remain under active investigation. Twenty kidnaping cases occurred during the past fiscal year and all were solved. The FBI investigated a total of 889 bank robberies from the time of the enactment of the Federal Bank Robbery Act on May 18, 1934, until June 30, 1941, resulting in 610 convictions in Federal courts. During the fiscal year 1941, 137 convictions were secured in Federal courts. During the fiscal year 1941, 4,671 stolen motor vehicles valued at \$2,240,742 were recovered in cases involving violations of the National Motor Vehicle Theft Act. Federal court action resulted in 2,282 convictions.

Seventeen sessions of the FBI National Police Academy have been completed since the course was started in 1935. A total of 591 selected representatives of municipal, county, and State, and other Federal law enforcement organizations have completed the training course in the FBI National Police Academy and have returned to their respective communities to establish police training schools. Through the graduates advanced police training has been made available to 89,000 police officers.

A total of 8,759,782 fingerprint records were received in the Identification Division for the fiscal year 1941, an amount greater than the total volume of prints received during the entire seven preceding years. Created in 1924, with a nucleus of 810-188 fingerprint cards, the Identification Division, at the end of the fiscal year 1941, contained 21,741,008 sets of fingerprint cards.

A total of 4,282,415 alien registration fingerprint cards were received for filing by the FBI in the fiscal year 1941. The expansion of the Federal Civil Service resulted in the contribution of 499,085 sets of fingerprints to the FBI. The fingerprints of over 64 per cent of all persons arrested during the year were identified with criminal records when searched through the FBI files. A new high of 11,348 contributing law enforcement agencies was reached.

The Technical Laboratory of the FBI received additional burdens as a result of the increase in volume of national defense work. As compared with 7,097 examinations made in 1940, 14,589 were made by FBI technicians in the fiscal year 1941. Assistance was given other government agencies in 335 instances and to municipal, county, and State law enforcement agencies in 1,670 instances. Laboratory experts testified in court in 99 cases. Their testimony was made available to prosecutors in State court criminal proceedings in 23 different States and the District of Columbia.

The FBI has since September, 1930, served as a central clearinghouse for the collection, tabulation, and publication of nation-wide crime statistics. A total of 4,369 law enforcement agencies throughout the United States, its territories and possessions contributed crime reports to the FBI the past year.

See PHOTOGRAPHY under *Military photography*.
J. EDGAR HOOVER.

FEDERAL COMMUNICATIONS COMMISSION (FCC). See COMMUNICATIONS; MUSIC; NEWSPAPERS AND MAGAZINES; RADIO; TELEPHONY.

FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA. An organization established in 1908 by 28 Protestant denominations to act for them in matters of common interest. At the end of 1940 it included most of the major Protestant denominations of the United States.

The total number of communicant members included in the Council's constituency in 1941 was approximately 23,000,000, counting only those 13 years of age and over. The Presbyterian Church in the United States (South) and the Church of the Brethren joined the Council in 1941.

The program of 1941 was marked by a strong emphasis on the new tasks created by the war. The Commission on Army and Navy Chaplains opened an enlarged office in Washington, D.C. The Commission on Camp and Defense Communities was created, with the collaboration of the Home Missions Council, to assist the churches facing enlarged responsibilities because of their proximity to camps or new wartime industries. A Committee on Conscientious Objectors represented the interest of the cooperating churches in the men rendering their "work of national importance" in civilian camps. A Committee on Foreign Relief Appeals, with the collaboration of the Foreign Missions Conference, coordinated the efforts in behalf of refugees, prisoners of war, the suffering in China, children in unoccupied France, missionaries cut off from their normal bases of support, and church groups undergoing unusual privation in Europe. A Commission on Aliens, with special reference to interned aliens in America, was established after the United States entered the war. A Commission to Study the Bases of a Just and Durable Peace was appointed.

The Council continued the National Christian Mission in a dozen centers of population. Interdenominational conferences on family life, on religion and health, on Christian social work, on inter-racial cooperation and on public worship were held in

the different regions of the nation. Ten religious programs over national radio networks were presented each week throughout the year. *Information Service* was published weekly as an analysis of social, international and inter-racial problems of special interest to the churches and the *Federal Council Bulletin* as the official organ of the Council.

Among the important pronouncements of the year were messages on the relation of the Church to racial problems, industry, rural life and the war.

Officers during 1941 were: President, Dean Luther A. Weigle; vice-president, Rev. Albert E. Day; treasurer, Frank H. Mann; and general secretary, the Rev. Samuel McCrea Cavert. National offices are at 297 Fourth Avenue, New York City. An office is also maintained in the Woodward Building, Washington, D.C.

FEDERAL HOUSING ADMINISTRATION (FHA). The Federal Housing Administration, established in June, 1934, pursuant to the terms of the National Housing Act, insures qualified lending institutions against loss on home mortgage or property improvement loans which conform to FHA requirements. The purpose of the FHA program as defined by Congress is "to encourage improvement in housing standards and conditions" and "to provide a system of mutual mortgage insurance."

During 1941 FHA activity was the greatest in its history. All types of insurance written amounted to \$1,185,852,709 as compared with \$1,026,049,609 written in 1940. The total amount of insurance written to date by FHA amounts to \$5,262,117,385. All of the funds involved were advanced by private lending institutions, as FHA lends no money.

Under Title VI, the amendment of Mar. 28, 1941, of the National Housing Act, FHA is authorized to underwrite mortgages to an amount not exceeding \$300,000,000 covering new one- to four-family homes, with mortgages limited to \$4,000 on single family homes and \$10,500 on four-family homes in designated defense areas. As of Dec. 31, 1941, 40,793 mortgages amounting to \$146,413,340 have been accepted for insurance under Title VI. Not all defense activity is reflected under this title, however, as homes valued under \$6,000 or renting for \$50 or less a month in defense areas may be insured under Title I and Sections 203 and 207 of Title II and so be eligible for priority preference for critical materials.

Title II mortgage insurance activity reached its highest point in 1941 when 198,799 small home mortgages amounting to \$876,707,384 were insured under Section 203, and 27 rental housing projects for \$12,997,841 providing 3,001 dwelling units were insured under Section 207. To date 832,822 small home mortgages amounting to \$3,583,060,123, and 344 rental housing projects amounting to \$139,950,516 and providing 37,000 dwelling units have been insured.

Title I activity also was at its highest, 687,827 property improvement loans amounting to \$282,716,234 being insured. Since the start of the FHA program, a total of 3,697,061 loans aggregating \$1,525,675,496 have been insured under this title. Of this volume, since Feb. 3, 1938, 33,000 new small-home mortgages totaling \$84,000,000 have been insured under the provisions of Class 3 of this title.

FHA activities are carried on without cost to the Federal government. Its income, derived from insurance premiums, inspection fees, and other sources, substantially exceeds its operating expenses and insurance losses, and results in large additions

each year to its reserves against possible future losses.

ABNER H. FERGUSON.

FEDERAL LOAN AGENCY. An agency of the United States government under which are grouped those agencies established for the purpose of stimulating and stabilizing the financial, commercial, and industrial enterprises of the nation. The component agencies are: Electric Home and Farm Authority; Export-Import Bank of Washington (q.v.); Federal Home Loan Bank Board; Federal Housing Administration (q.v.); Reconstruction Finance Corporation (q.v.). Administrator in 1941: Jesse H. Jones

FEDERAL POWER COMMISSION. See ELECTRIC LIGHT AND POWER.

FEDERAL RESERVE SYSTEM. See BANKS AND BANKING; also, BUSINESS REVIEW.

FEDERAL SECURITY AGENCY. An agency of the United States government under which are grouped those agencies whose major purposes are to promote social and economic security, educational opportunity, and the health of the citizens. The component agencies are discussed in the following separate articles: CIVILIAN CONSERVATION CORPS; EDUCATION, OFFICE OF; FOOD AND DRUG ADMINISTRATION; NATIONAL YOUTH ADMINISTRATION; PUBLIC HEALTH SERVICE; SOCIAL SECURITY BOARD. Administrator in 1941: Paul V. McNutt.

FEDERAL TRADE COMMISSION (FTC). See GARMENT INDUSTRY.

FEDERAL WORKS AGENCY. An agency of the United States government under which are grouped those agencies dealing with public works and administering Federal grants and loans for the purposes of construction. The component agencies are: Federal Fire Council; Public Buildings Administration; Federal Real Estate Board; Public Roads Administration; Public Works Administration (q.v.); Housing Authority, U.S. (q.v.); and Work Projects Administration (q.v.) Administrator in 1941: John M. Carmody. See CONSTRUCTION INDUSTRY.

FEDERATED MALAY STATES. See BRITISH MALAYA.

FEEDS. See DAIRYING; HAY; LIVESTOCK

FENCING. Dr. Norman C. Armitage, three times Olympian, bested the nation's leading sabermen to become the lone holdover fencing champion in 1941. This steel-armed veteran retained his championship, while all other titleholders, individual and team, were being shuffled back. But at that there was only one newcomer to the purple ranks—Dean Setrulo, captain of the Seton Hall College swordsmen, who won the national foils crown while still a collegian, a rare feat. Gus Heiss, of the U.S. Army, regained the national epee title in the heated milling which saw the defending champion, Capt. Fred Siebert of St. Louis, leave in the first round. The women's title was taken by Miss Helene Mayer, absolutely tops among women fencers, and the three-weapon bauble fell to Miguel A. de Capriles. The New York Athletic Club took the team foils crown, with the epee title going to the Fencers Club of New York City and the saber to the Salle Santelli of the same place, and the Fencers Club accounting for the women's foils.

Among the collegians, New York University remained supreme, winning the three-weapon title

and two of the three other team championships. The Violet took the foil and epee while Harvard and C.C.N.Y. tied for saber honors. The individual foils crown fell to Charles Steinhardt of St. Johns, the epee to Arthur Tauber, N.Y.U. left hander, and the saber to Griffith Stokes of the U.S. Naval Academy. Miss Grace Acel of William and Mary won the women's college title.

FERNANDO PO. See SPAIN under *Colonial Empire FERTILIZERS.* See AGRICULTURE, U.S. DEPARTMENT OF, PHOSPHATES, POTASH.

FESTIVALS. See MUSIC.

FHA. See FEDERAL HOUSING ADMINISTRATION.

FIELD EXERCISES. See MILITARY PROGRESS.

FIFTH COLUMN. See ARGENTINA, BOLIVIA, BRAZIL, BULGARIA, CHILE, EGYPT, EIRE, GREECE, HUNGARY, IRAN, IRAQ, MEXICO, PHILIPPINES, RUMANIA, UNION OF SOVIET SOCIALIST REPUBLICS, SOUTH AFRICA, URUGUAY, YUGOSLAVIA, under *History, COMMUNISM; FASCISM.* For preventive measures in the United States, see FEDERAL BUREAU OF INVESTIGATION.

FII. A British crown colony in the southern Pacific, consisting of some 250 islands (80 inhabited) and the dependent islands of Rotuma. Total area, 7,083 square miles; total population (Jan 1, 1940), 215,030, (including 102,750 Fijians, 94,966 Indians, 4,259 Europeans, 2,054 Chinese, 4,968 of European and native descent, 2,991 Rotumans, and 3,042 others. Suva (capital), including suburbs, had 15,522 inhabitants (1936). Chief products. sugar, copra, bananas, pineapples, copal, native foodstuffs, and gold (115,742 troy oz. produced in 1940, three mines—Emperor, Loloma, and Fiji Mines—produced gold valued at £970,646 during 1940). Hard and soft woods are produced from the forests. Livestock (1938-39): 70,000 cattle, 18,000 goats, 3,000 swine, 1,300 horses, donkeys, and mules. Trade (1939). £1,624,054 for imports; £2,746,207 for exports. Shipping (1939): 1,895,443 tons entered and cleared Finance (1939): £930,866 for revenue, £1,095,928 for expenditure Public debt (Dec. 31, 1939), £1,574,692. Estimated expenditure for 1941: £1,034,742. The colony is administered by a governor, aided by an executive council. There is a legislative council of 32 members including the governor as president Governor of Fiji and High Commissioner for the Western Pacific, Sir Harry Luke (appointed June 26, 1938).

History. A hurricane reaching a wind force of 110 miles per hour swept through the eastern part of the islands on Feb. 20, 1941, causing extensive damage to property. Most of the telephone and power lines were blown down, many small vessels were blown ashore and a number of small yachts were lost or wrecked. There were only two fatal casualties. Fiji, on Nov. 10, 1941, became a link in the transpacific air service of Pan American Airways in the route from San Francisco to New Zealand when the first pacific clipper in regular scheduled service reached Suva.

FILMS. See MOTION PICTURES; PHOTOGRAPHY.

FINANCE. See BANKS and BANKING; BUSINESS REVIEW; FINANCIAL REVIEW; PUBLIC FINANCE; articles on countries and States under *Finance.*

FINANCIAL REVIEW. The intensification of the domestic armament program, adoption of the lease-lend program for aid to nations fighting aggression and the outbreak of the war with Japan affected the nation's financial system to a remarkably mild

degree. The series of international crises preceding the beginning of the European war in 1939, the adjustment of the financial markets to the epoch-making events of 1940 and the numerous controls already established by the Treasury, the Federal Reserve System, and the Securities and Exchange Commission all contributed to cushioning the structure of finance against the new shocks and strains.

During the period 1934 to 1940, inclusive, the importation of almost \$16,000,000,000 of gold had been a dominant financial development. The unprecedentedly heavy inflow of gold from abroad had swelled bank reserves and deposits, and had been the key factor depressing interest rates. In 1941, however, the American financial system was largely cut off from the eastern hemisphere. Trade with Great Britain was shifted to a lease-lend basis in large part, except for outstanding commitments under orders placed in the United States before the lease-lend law was passed. Alien funds within this country were registered, and in large part frozen. The American financial system thus became virtually independent of foreign influences, at the same time that the entry of the nation into the war produced a vast expansion of Government spending, sharply higher taxes, and a very obscure economic outlook.

Security Markets. Stock prices declined during the first six weeks of the year as heavy British ship losses clouded the war prospects and greatly increased taxes loomed ahead. The successful Greek resistance to the Italians contributed to a mild rally in March, but the new Allied reverses in the spring were accompanied by another wave of liquidation that brought the level of share prices almost back to the low point of the June, 1940, break. Unexpectedly firm Russian resistance to the German invasion in the summer, however, stimulated rallying tendencies. In the closing months of the year, the stock market suffered intermittent periods of weakness which caused the industrial share price average to touch the lowest point since 1938. Sales to realize losses for tax purposes, and in many instances to register profits, occurred on an unprecedented sale, as taxpayers generally feared that the capital gains and losses provisions of the revenue act would be made less favorable in 1942. The high rates of income taxation in effect further stimulated realization of capital losses. The Japanese attack on Pearl Harbor caused a brief flurry of liquidation, but the market was orderly, and the selling soon petered out. Throughout the year, the market largely ignored the record volume of industrial activity and the increased earnings reported by the great majority of corporations. The apathy of investors and speculators reflected the view that taxes and restrictions would soon check the rise in profits, and that postwar economic prospects were very dubious for most industries.

The highs and lows of the *New York Times* stock price averages during each month of 1941 were as follows:

NEW YORK TIMES STOCK MARKET AVERAGE, 1941
[60 Stocks—25 Rails and 25 Industrials]

Month	High	Low	Last
January	96.60	89.59	89.74
February	90.08	84.54	87.34
March	88.63	86.40	88.14
April	90.08	83.57	83.75
May	86.01	83.27	84.38
June	90.39	84.27	89.33
July	94.70	88.93	93.38
August	93.62	90.39	91.83
September	92.56	89.91	90.80
October	90.93	84.48	84.81
November	86.71	80.63	80.88
December	83.98	74.95	78.13

Stocks of companies that did not benefit materially from wartime activity, while having to pay greatly increased taxes, fared worst in the market movements for the year. Public utility, tobacco, and instalment finance shares were among the hardest hit. The gradual curtailment of automobile production during the year darkened the earnings outlook for this industry, and made for weakness in motor shares. On the other hand, shares of companies receiving large armament orders held up relatively well in many cases, while railroad securities were helped by the favorable tax position of this industry due to the large interest deductions from taxable income made possible by their large outstanding indebtedness and the high invested capital which reduced liability for excess profits taxes.

The high, low and closing prices of leading issues listed on the New York Stock Exchange during 1941 were as follows:

PRICES OF THE MOST ACTIVE STOCKS, 1941

Stock	High	Low	Close
Air Reduction	45 July 28	34½ Nov 29	36½
Allis Chalmers Mfg.	37 Jan 4	24½ Dec 10	28½
American Radiator	7½ Jan. 10	3½ Dec. 17	4½
American Smelting	45½ July 28	33½ Dec 10	41½
American Tel & Tel	168¾ Jan 6	115½ Dec 26	128½
Anaconda Copper	30 July 22	22½ Feb 14	27½
Atchison, T. & S	30 July 22	22½ Feb. 14	27½
Aviation Corp.	5½ Jan. 6	2½ Apr. 17	4
Baldwin Loco	19 Jan. 2	10½ Dec. 9	13½
Bethlehem Steel	89½ Jan. 3	51½ Dec. 9	65
Boeing Airplane	24½ Sep. 9	12½ Apr 21	19½
Canadian Pacific	5½ Aug 2	3 Dec 22	3½
Chesapeake & Ohio	44½ Jan. 13	31½ Dec 26	33½
Chrysler Corp	72½ Jan 2	41½ Dec 22	45½
Columbia Gas & E	4½ Jan 9	1 Dec 18	1½
Com'l Inv Trust	37½ Jan 10	19½ Dec 17	20½
Com'w Edson	30½ Jan 11	20 Dec 10	22½
Consolidated Edison	23½ Jan. 13	11½ Dec 18	12½
Consolidated Oil	6½ May 21	5 Dec 23	5½
Curtiss-Wright	10½ Sep. 8	6½ Dec 10	8½
du Pont de Nemours	104½ Jan 7	130½ Dec. 24	143
General Electric	35½ Jan. 14	24½ Dec. 10	26½
General Motors	48½ Jan. 6	28½ Dec 18	30½
Int Harvester	87 July 22	42½ Dec 10	46½
International Nickel	31½ Sep 11	23 Dec 9	26½
International Paper	6½ Sep 18	10½ Feb. 19	14½
Inter. Tel & Tel.	3½ Sep 9	1½ Dec 29	1½
Lockheed Aircraft	31½ Sep 5	19½ Apr 21	22
Montgomery Ward	20½ Jan. 8	24½ Dec 18	25½
National Biscuit	18½ Jan. 7	13½ Dec 29	14½
North American Co.	17½ Jan. 10	9½ Dec 18	9½
Packard Motor	3½ Jan. 6	1½ Dec. 29	2
Paramount Pictures	16½ Dec. 4	10 Feb. 14	14½
Penn R. R....	25½ Apr 4	17½ Dec. 9	19
Pullman	29½ July 22	19½ Dec 9	23½
Radio Corp.	4½ Jan 4	2½ Dec. 29	2½
Republic Steel	22½ Jan. 6	14½ Dec 9	18½
Reynolds Tobacco B	34½ Jan. 7	22½ Dec 23	24½
Sears Roebuck	78½ Jan 2	49½ Dec 29	52½
Socony-Vacuum	10½ July 22	7½ Dec 29	7½
Southern Pacific	14½ Aug 1	8 Jan. 2	11
Standard Oil Cal	25½ Nov. 6	17½ Mar 4	18½
Standard Oil N J	46½ Dec. 4	33 Feb. 14	41½
Texas Co.....	46½ Dec. 6	34½ Feb. 19	39½
United Gas Imp.	10½ Jan 15	4½ Dec 23	4½
U. S. Steel	70½ Jan. 6	47 Dec 10	53½
Western Union	31½ Nov. 6	18½ Feb. 13	23½
West El & Mfg.	105 Jan. 2	71½ Oct. 28	77½
Woolworth....	34½ Jan. 7	23½ Dec 20	24½

December. A slight softening of quotations in the spring was followed by renewed firmness as insurance companies and banks bid for the limited available supply. Long-term Government and corporate obligations advanced in price up to the actual outbreak of the war, and the decline in December was relatively moderate, although limited official support was forthcoming from the Federal Reserve banks. Short-term interest rates did rise considerably, but this was a direct reflection of the decline in excess reserves of the banks. Weakness in prices of short-term Treasury securities failed to affect the long-term bond market, where the scarcity of offerings was the chief market factor. Municipal bonds were particularly strong, rising to record high prices during the latter part of the year because of the sharply higher personal income taxes in effect and the desire of investors requiring income to obtain an assured return free from tax. After the outbreak of war, however, nervousness prevailed among municipal bond dealers and investors who feared that some way might be found by Congress to tax the income from State and municipal securities, although the Treasury insisted until after the turn of the year that it was interested only in taxing income from future issues of this kind.

The average yield of all Federal obligations with maturity or call dates twelve years or more away was 1.97 per cent in December, 1941, as compared with 1.89 per cent a year before. The yield on five high grade corporate bonds firmed from 2.59 per cent to 2.68 per cent.

Middle grade bonds, especially of railroads, were under pressure of liquidation from financial institutions, above all banks, who feared for the postwar fate of such securities when the stimulus of defense traffic would no longer be available. Defaulted railroads bonds, on the other hand, were strong because of their favorable tax position, although there was heavy liquidation of such issues in the closing weeks of the year to realize losses for tax purposes. The course of corporate bond prices, as reflected in the indices of Standard and Poor's Corporation, was as follows (see also RAILWAYS):

AVERAGES OF BOND PRICES

Number of issues	Total	Corporate		
		Industrial	Railroad	Utility
1941—January	85.3	90.5	64.3	101.2
February	84.5	89.9	62.3	100.9
March	85.3	90.2	64.3	101.3
April	85.8	90.2	65.9	101.1
May	86.0	90.1	66.7	101.2
June	85.8	90.4	65.8	101.1
July	86.3	91.1	66.6	101.0
August	86.0	91.0	65.9	101.2
September	85.6	91.2	63.9	101.6
October	85.6	91.1	64.2	101.6
November	85.4	91.0	64.0	101.3
December	83.9	90.2	61.2	100.2

The turnover on the New York Stock Exchange during the year aggregated 170,603,671 shares, the smallest since 1918. It compared with 207,599,749 shares in 1940. Sales of bonds on the New York Stock Exchange increased, in large part because of the heightened activity in bonds of railroads undergoing reorganization, to \$2,114,098,550, as compared with \$1,671,598,875 in the preceding year. The total value of all listed stocks on the New York exchange at the end of 1941 was \$37,882,000,000, as compared with \$41,890,000,000 a year earlier.

High grade bond prices were remarkably stable throughout the year, considering the rapid rise in Government expenditures and borrowing and the fact that the nation became involved in war in

Financial Regulation. Preoccupation with the national defense program resulted in a less aggressive attitude on the part of the Securities & Exchange Commission in its efforts to extend further the regulation of finance. While proceedings were carried forward to compel public utility holding company systems to conform to the integration and simplification requirements of the Public Utility Holding Company Act of 1935, at least implied recognition was given to the increasing difficulty facing these companies in selling some of their investments to the public. The SEC, in fact, specifically favored exchanges by holding companies of operating company securities for their own preferred stocks, so as not to burden the market with public offerings for sale of such blocks of stocks. The Commission did

adopt a rule requiring registered holding companies and their subsidiaries to offer new issues of securities at competitive bidding, in order to assure the existence of "arm's length bargaining."

A long series of conferences between the SEC and representatives of organizations of security dealers and the stock exchanges produced two separate sets of recommendations for amendment of the securities legislation, parts of which coincided. However, Congress did not find time to act on any of these suggestions, although some hearings were held on the proposals.

No need was found for reviving the Capital Issues Committee of the first World War period, to prevent security issues by non-essential industries. Priority restrictions prevented such industries from expanding plants and equipment in any event, while the SEC did require that the ability of a corporation to obtain preference ratings for materials required should be stated clearly on a prospectus of a security issue to finance capital expansion.

New Financing. New capital issues to finance expansion were somewhat larger during 1941 than in the preceding year, while refunding was in somewhat smaller volume. Financing to raise new capital and to refund outstanding obligations varied from month to month as follows during 1941:

NEW PUBLIC FINANCE, 1941
[Millions of dollars]

Month	Total	New Capital	Refunding
January	421	95	325
February	347	77	270
March	406	182	223
April	920	745	175
May	406	107	299
June	881	519	362
July	612	296	316
August	471	360	110
September	273	65	209
October	299	132	167
November	238	110	127
December	216	121	95

Source: *The Commercial and Financial Chronicle*

The Federal Government in 1941 raised \$4,733,000,000 through the sale of bonds and notes for new money. The Treasury adopted a policy of financing all Federal agencies through the sale of its direct obligations, offering its own four year notes on November 1 in exchange for maturing obligations of the RFC and the CCC. This change in policy in financing its agencies was based on a desire to coordinate fully the raising of money for the Federal Government, so as to eliminate sales of agency issues that might interfere with the Treasury's sale of its own obligations to finance the huge deficit produced by the national defense program. The largest Treasury issues were the \$1,307,000,-

000 of 25 year 2½ per cent bonds sold on October 20 and the \$1,070,000,000 issue of similar maturity and coupon sold on December 15, both of which were sold largely to insurance companies and banks.

With the outbreak of the war and the consequent drastic increase in the size of the prospective deficit, Treasury borrowing needs reached unprecedented proportions. While special tap issues and forced loan plans received widespread consideration, further large flotations in the open market were anticipated.

Public financing by State, municipal, and corporate issuers during the year, and comparisons with preceding years, are tabulated below.

Many corporations again sold new issues of bonds directly to insurance companies through private placements. Furthermore, when the American Telephone & Telegraph Company for the first time offered a \$90,000,000 bond issue at competitive bidding, it was bid in by three large life insurance companies so that security dealers failed to participate in its distribution. This caused alarm among investment bankers, who feared that such tactics of the insurance companies threatened to eliminate them entirely from the distribution of high grade bond issues to institutional investors. Conferences were held between insurance company executives and large bond houses, leading to informal agreements by some of the latter to act virtually as agents of the insurance companies in bidding for new issues, assuring them a large share of new offerings and a narrowing of the banker's profit margin. This trend in security distribution jeopardized more than ever the position of the small retail security distributors.

A number of brokerage houses added to their revenue by placing blocks of listed shares directly with investors through salesmen, without use of the stock exchange mechanism. A plan to establish a special market on the floors of the stock exchanges for such blocks of shares, which would be offered to dealers for resale on the floor at a concession from the quoted price, was seriously studied and debated among brokerage houses, many of whom felt that such "secondary distributions" should be effected with the aid of the stock exchange machinery, since listed securities were involved. The election of Emil Schram, president of the RFC, to the presidency of the New York Stock Exchange was expected to lead to more aggressive study of such methods of expanding income of stock exchange member firms, to offset the loss of speculative activity.

International Capital Movements. The war and the freezing of foreign funds within the United States

SUMMARY OF NEW FINANCING

[In millions of dollars]

Year	Total (New and refunding)	Total new capital	Total domestic	New Capital State and municipal ^a	Federal agencies ^b	Bonds & notes	Corporate Stocks	Foreign ^c	Total refunding
1928	9,992	8,114	6,789	1,370	64	2,385	2,961	1,325	1,877
1929	11,582	10,183	9,420	1,418	0	2,078	5,924	763	1,409
1930	7,077	7,023	6,004	2,980	87	2,980	1,503	1,019	654
1931	4,023	3,116	2,860	1,236	75	1,239	311	256	907
1932	1,730	1,192	1,165	762	77	305	20	27	538
1933	1,054	710	708	483	64	40	120	2	344
1934	2,212	1,386	1,386	803	405	144	35	0	826
1935	4,752	1,412	1,409	855	150	334	69	3	3,340
1936	6,254	1,973	1,972	735	22	839	352	25	4,281
1937	4,001	2,101	2,098	712	157	817	408	3	1,901
1938	4,459	2,355	2,329	971	481	807	65	25	2,104
1939	5,853	2,298	2,235	931	924	287	97	60	3,555
1940	4,806	1,951	1,949	751	461	601	135	2	2,855
1941	5,515	2,831	2,830	521	1,272	869	168	2	2,683

^a Includes issues of noncontiguous U. S. Territories and Possessions. ^b Includes publicly offered issues of Federal land banks, Federal intermediate credit banks, Federal Farm Mortgage Corporation, and Home Owners Loan Corporation; excludes direct obligations of U. S. Treasury. ^c Figures do not include funds obtained by States and municipalities from any agency of the Federal government.

halted the inflow of capital into this country, which had been pronounced since 1935. Foreigners in Latin America and elsewhere who could withdraw capital from the United States did so in many cases, in fact, and many aliens within this country drew down their funds here for living expenses and commercial purposes. The moderate decline in foreign capital resources in the United States during the year is shown in the following table published by the Treasury Department:

NET CAPITAL MOVEMENT BETWEEN THE UNITED STATES AND FOREIGN COUNTRIES,
1935 THROUGH SEPTEMBER, 1941

[In millions of dollars Capital inflow or capital outflow (—)]

	Grand Total	United Kingdom	France	Ger- many	Italy	Nether- lands	Switz- erland	Other Europe	Total	Canada	Latin America	Asia	All Other
Jan. 2, 1935-Jan. 1, 1936	1,412.5	554.9	210.2	36.6	24.0	114.5	130.4	123.0	1,200.6		70.9	128.3	12.7
Jan. 1, 1936-Dec. 30, 1936	1,195.9	274.4	89.3	46.5	21.6	115.2	205.2	98.5	850.7	150.5	130.3	55.7	8.7
Dec. 30, 1936-Dec. 29, 1937	801.9	164.4	-17.8	40.8	-23.5	82.2	271.9	83.8	601.7	-44.2	209.4	40.5	-5.5
Dec. 29, 1937-Dec. 28, 1938	415.3	192.3	57.8	16.8	10.9	12.7	-53.5	151.6	388.7	50.9	-21.1	-21.4	18.2
Dec. 28, 1938-Jan. 3, 1940	1,195.6	-84.8	129.2	25.2	25.0	145.7	219.0	289.1	748.4	72.3	93.9	227.8	53.3
Jan. 3, 1940-Dec. 31, 1940	706.4	-236.1	201.6	10.0	-2.7	-14.7	138.0	169.8	266.5	182.3	123.4	131.3	2.9
Dec. 31, 1940-Oct. 1, 1941	-217.3	-171.2	-15.6	2.9	-5.3	-4.6	-75.2	12.3	-256.8	-4.1	-8	17.9	26.5
Total	5,510.2	694.0	654.7	178.8	50.1	451.0	836.3	935.1	3,799.8	407.6	606.0	580.1	116.7

These alien capital funds and the earmarked gold held here for the account of the Bank of France and other foreign central banks provide Europe with a large backlog of liquid capital which could be used to help finance postwar reconstruction. At the end of the first World War, there was no such large fund of alien assets held intact within the United States and available for postwar use.

Foreign Funds Control. Control over foreign funds was greatly extended during the year, as part of the economic warfare waged by the nation upon the Axis countries, as well as to protect persons and corporations in occupied countries who might be compelled to surrender their American assets under compulsion by the invading forces.

The invasion of the Balkans caused the President to subject nationals of those countries, except Turkey, to the Executive Order freezing assets held by them in the United States. On June 14, the President issued a sweeping order covering financial transactions between all persons and banking institutions in the United States and other countries, requiring licenses before such payment could be effected. General licenses were immediately issued covering the British Empire, Latin America, and other specified friendly countries.

On July 17, the President authorized the publication of a "list of certain blocked nationals," which provided a blacklist of persons and concerns abroad with which Americans were not to carry on dealings. This blacklist was prepared by the State and Treasury departments, acting in conjunction with the Attorney General, the Secretary of Commerce, the Administrator of Export Control and the Coordinator of Commercial and Cultural Relations Between the American Republics. At the same time, aliens were required to register all assets held in this country, to facilitate official control.

See the topics listed under FINANCE.

JULES I. BOGEN.

FINE ARTS. See ART; LITERATURE, MUSIC; THEATER. **FINGERPRINTS.** See FEDERAL BUREAU OF INVESTIGATION; also, CIVIL SERVICE COMMISSION.

FINLAND. A republic of Northern Europe. Capital, Helsinki (Helsingfors).

Area and Population. Following the cession of 13,558 square miles of territory to the Soviet Union by the Soviet-Finnish peace treaty of Mar. 12, 1940, Finland had an area of 134,253 square miles. Most of the ceded territory was reoccupied by the end

of 1941. Estimated population in 1938, 3,863,753. Practically all the inhabitants of the area ceded to the Soviet Union were evacuated to Finnish territory. About 90 per cent of the people speak Finnish, and most of the remainder speak Swedish. Estimated populations of the chief cities in 1937 were: Helsinki (Helsingfors), 293,237; Viipuri (Viborg), ceded to Russia, 73,917; Turku (Åbo), 72,918; Tampere (Tammerfors), 74,736; Vaasa (Vasa), 32,108. Swedish place names are given above in

parentheses.

Education and Religion. School attendance in 1938-39 was: Elementary, 403,403; secondary, 50,580; university and schools for higher education, 8,752; vocational and technical, 20,583. Less than 1 per cent of the adult population was illiterate in 1930. War damage to educational institutions in 1939-40 was estimated at 333,000,000 marks. The Technical University of Helsinki, where damage totaled 20,000,000 marks, was repaired and reopened by Oct. 1, 1940. The population on Jan. 1, 1938, included 3,680,237 Lutherans, 70,887 Greek Catholics, 9,840 Baptists and other Evangelical church members, 1,551 Roman Catholics, 1,755 Jews, and 360 Moslems.

Production. The 1930 census showed 60 per cent of the working population engaged in agriculture and 16.8 per cent in industry. About 9,000 new farms were reported established during 1940 for families evacuated from territory ceded to the Soviet Union. Nevertheless farm production was reduced an estimated 10 to 14 per cent as a result of the cession. Estimated 1940 yields of the principal crops, excluding ceded territory, were (in metric tons): Wheat, 163,000; barley, 154,000; rye, 269,000; oats, 596,000; potatoes, 1,556,000 in 1939; beet sugar, 11,700 in 1939. The volume of production of the important forest-products industries in 1940 was about half that of preceding years. Newsprint output in 1940 was 80,000 metric tons (450,000 in 1939); exports, 61,000 tons (422,000). Industrial production for domestic consumption in 1940 increased 20 per cent in value over 1939 due to price increases, although volume output declined.

Foreign Trade. Commercial imports in 1940, excluding war materials, were estimated at 5,180,000,000 marks (7,570,000,000 in 1939); total exports, about 2,870,000,000 marks (7,700,000,000 in 1939). Chief 1940 exports were (millions of marks): Lumber, 1,200; paper and cellulose, 950; metals, 200; ores, 80; hides and skins, 90; textiles, 50; foodstuffs, 70. Chief commercial imports (millions of marks): Raw materials, 2,612.7; machinery, 799.6; industrial products, 578.8; foodstuffs and luxuries, 1,188.5. Trade in 1940 was carried on mainly with Sweden and Germany.

Finance. As adopted by the Diet, the original budget for 1941 balanced at 18,130,000,000 marks each for receipts and expenditures, with more than half the anticipated income coming from loans. A supplementary budget providing for expenditure

of an additional 1,439,700,000 marks for reconstruction and relief was introduced in the Diet Apr. 30, 1941. The preliminary 1942 budget balanced at 11,100,000,000 marks. The national debt increased from 5,000,000,000 marks on Dec. 31, 1939, to 17,500,000,000 on Oct. 4, 1940 (see *History*). The average exchange rate of the Finnish mark was \$0.0216 in 1938, \$0.0199 in 1939, and \$0.0187 in 1940.

Transportation. The Finnish railways, mostly operated by the state, extended 5,107 miles in 1939. An estimated 16 per cent of the total railway mileage was ceded to the Soviet Union in 1940. To adjust the railway network to this loss, the lines Kontiomaki-Taivalkoski, Suolahti-Heapajärvi, and Orivesi-Jamsa were under construction in the spring of 1941 in addition to the Kemijärvi-Kandalaksha line provided for in the Russo-Finnish peace treaty. Highway mileage in 1940, 39,826, number of automobiles, 7,968. Air lines connected Helsinki with Stockholm and the German European network. The Helsinki-Petsamo airline was reopened June 2, 1941, by the Swedish Aerotransport. When the Baltic was closed by the war in 1939, Finland had 145 merchant ships of 230,000 gross tons in that sea and 75 vessels of 230,000 gross tons outside. Some of the latter were used to maintain a service to and from the Arctic port of Petsamo until Finland again became involved in war with Russia in 1941.

Government. The Constitution of July 17, 1919, vested executive power in a President elected for six years by 300 electors, chosen in the same manner as members of the Diet. Legislative power rests with the unicameral Diet and the President. The 200 members of the Diet are elected by direct vote of all citizens, male and female, 24 years or more of age. The cabinet is appointed by the President but is responsible to the Diet. President, Risto Ryti (National Progressive), who became Acting President on Nov. 28, 1940, and was elected President Dec. 19, 1940. For the standing of the parties in the Diet, see *YEAR BOOK*, 1939, p. 276. A government of national union, representing a coalition of the five largest political parties (Social Democrats, Agrarians, National Coalition, Swedish People's party, and National Progressives), was formed Dec. 1, 1939, upon the outbreak of the Russo-Finnish war. It was reorganized Mar. 27, 1940, and Jan. 4, 1941 (see *YEAR BOOK* for 1940). Premier in 1941, Johan Wilhelm Rangell.

HISTORY

The Pro-German Trend. During the latter half of 1940, there were strong indications that Finland was being drawn into closer collaboration with Germany as a result of Moscow's threatening attitude, its open support of the Communist movement in Finland, and Finland's growing economic dependence upon the Reich (see *YEAR BOOK* for 1940, p. 267). This trend was accelerated during the first part of 1941 by signs of increasing Soviet-German estrangement. In April and May the Finnish press reflected the belief of many Finns that a Russo-German war was inevitable and that Finland should align itself with the Reich to profit from the expected German victory.

The Finnish Foreign Minister in his annual survey of Finland's foreign relations before the Diet on March 5 declared that Finnish-Russian relations had returned "to normal." He reported that construction of the Kemijärvi-Kandalaksha railway was proceeding energetically in accordance with the peace treaty. Negotiations for certain border readjustments and for floating timber across the fron-

tier were under way, he stated. The Minister declared the two considerations dominating Finland's foreign policy were the maintenance of neutrality in the German-British war and the effort to make the best of Finland's geographical position.

Dispute over Nickel Mines. Soon afterwards Finnish-Soviet negotiations on the Soviet demand for the entire output of the Petsamo nickel mines came to an impasse. By a Finnish-Russian agreement concluded immediately after the peace treaty of Mar. 12, 1940, Russia received 60 per cent of the mines' production and Germany 40 per cent. In December, 1940, the Russians demanded the entire output. They also wanted to establish a joint Finnish-Russian company to operate the mines, with control of 51 per cent of the shares and a majority on the board of directors. The Germans, however, were reported to have refused to accept any reduction of their share of the Petsamo mines' output. Consequently Finnish negotiators sent to Moscow in January returned to Helsinki early in March without reaching an agreement. The Finnish Government later charged that the Russians threatened to use force in obtaining control of the mines.

Nazi Troops Admitted. The Moscow press on April 30 reported that 12,000 heavily armed German troops had landed at the Finnish port of Abo on April 26. This was formally denied by the Finnish Government, which explained that less than 1,300 unarmed German troops had entered Finland in transit to Norway under the German-Finnish transit accord of the preceding autumn (see *YEAR BOOK* for 1940). However neutral sources later revealed that no less than five fully armed German divisions had been concentrated in Finland under cover of the 1940 transit arrangement.

During the first week in June a group of important officers of the German Air Force visited Helsinki on an official mission. In mid-June there were further indications of a Finnish-German agreement directed at the Soviet Union. The Helsinki Government on June 13 restricted travel by foreigners in northern and central Finland, in all border districts, and along the coast of the Gulf of Bothnia. On the same day Berlin admitted the presence of German troops in Finland. About the same time the Helsinki authorities began to call up reservists and take other military precautions. Meanwhile Soviet-Nazi tension was deepening. On June 17 Finland announced its withdrawal from the League of Nations. Mobilization was virtually completed by the time general mobilization orders were posted on June 20. Women and children were evacuated from Helsinki and other cities, many of them going to Sweden.

Soviet Air Raids. In his statement of June 22 declaring war on the Soviet Union, Chancellor Hitler said that "united with their Finnish comrades" German troops were "standing in the Northern Arctic" to protect Finnish soil. On the same day Soviet planes bombed Finnish coastal fortifications and shipping. Nevertheless the Finnish Foreign Minister on June 23 announced that Finland was neutral in the conflict. According to Stockholm reports, the Finnish Cabinet and people were alike divided on entrance into the war. This indecision was ended by repeated Soviet air attacks upon Finnish ports and fortifications. After a secret meeting of the Diet on the evening of June 25, an official statement was issued announcing that because of these attacks, the Government "has decided to adopt defensive measures in which all available military forces will participate."

Ryti Proclaims War. Moscow charged that on June 23 German planes based in Finland had attacked

Kronstadt, and that on June 24 German forces crossed the Finnish-Soviet frontier near Salla. The Soviet Government notified Helsinki that in view of these developments, Finland could not be considered a neutral state. Following further heavy Soviet air raids on Abo, debarkation port for German forces in Finland, President Ryti in a radio broadcast to the nation on June 26 said that Finland was again fighting a defensive war against the Soviet Union, aided by "great Germany, under her leader of genius, Reichsführer Hitler."

Aland Islands Remilitarized. In a statement of their case issued by the Finnish Legation in Washington, the Finns recapitulated evidence supporting their charge that Moscow aimed at the annihilation of Finnish independence. The statement shed light on the situation in the Aland Islands, where Moscow had obtained the right to install a consulate after forcing the Finns to demilitarize the islands (see *YEAR BOOK* for 1940). It was charged that the establishment of the Soviet Consulate was followed by an excessive increase in its personnel and by subversive propaganda among the islanders by consular officers and employees. On June 28 Helsinki authorities announced that Finnish troops had occupied the Aland Islands beginning June 23. Swedish sources previously had stated that German troops landed on the islands 12 hours before the attack on the Soviet Union.

Finnish hopes that the Russians would collapse at once under the German assault, thus permitting the restoration of the lost territories without further fighting, proved unfounded. At the beginning of July, Finnish armed forces joined the Germans in offensive operations in Soviet territory and against the fortified peninsula of Hango, leased to Russia under the 1940 peace treaty. See *WORLD WAR*.

Tanner Reenters Cabinet. On July 3 ex-Premier Vaino Tanner, the Social Democratic leader forced out of the Cabinet in August, 1940, under Soviet pressure, reentered the Government as Minister of Industry and Commerce. Markedly strengthened by his presence, the Government for the first time informed the Finnish people of the commencement of military operations. It also sought and obtained from the Diet extensive powers for the prosecution of the war. Field Marshal Baron Carl Gustav Mannerheim, Finnish commander-in-chief during the 1939-40 struggle with Russia, was again placed in charge of the Finnish armies. In an order of the day issued July 10, he declared his determination to free not only the territories ceded to the Soviet Union in 1940 but also East Karelia, a Soviet border region with a large Finnish-speaking population.

Split on Foreign Policy. The Finnish people overwhelmingly supported the Government and the army leaders in their determination to reconquer the lost territories. But there was strong opposition to an invasion of East Karelia. In mid-August the Soviet Government indirectly offered to discuss peace on the basis of territorial compensation to Finland. This peace feeler was supported by the British and United States governments, and by a powerful faction in the Finnish Government and Diet. It was fought by the army leaders, who considered East Karelia necessary for the effective defense of Finland, and by a pro-German faction in Finland.

Signs of internal division on this issue appeared early in September, following the recapture of Viipuri (Viborg) from the Russians on August 30. Early in September six Social Democratic members of the Diet were reported arrested. At the same time Germany threatened drastic action against the Finns if they accepted peace on the

basis of the original Soviet-Finnish frontiers. In a radio broadcast of September 14 Minister Tanner stated that Finland was the Reich's ally "only by accident" and would not continue the war any longer than Finnish interests demanded, but that whatever was needed to secure Finland's frontiers must be done. The Government, he said, had no intention of making peace with Russia since the word of the Kremlin's rulers could not be trusted and the Soviet forces in any event would be defeated.

This statement, reflecting the victory of the expansionists in the councils of the Government, was followed by a joint Finnish-German drive into Soviet Karelia, and the capture of its capital, Petrozavodsk, on October 1. The struggle was continued despite growing popular opposition in Finland and the insistence of Britain and the United States that Finland cease offensive action. Early in December the Russians were driven out of Hango, their last foothold on Finnish soil. As in the case of Viipuri and other evacuated sites, they left behind ruin and destruction.

On November 25 Finland joined with other powers in signing the Anti-Comintern Pact in Berlin, but did not adhere to the Rome-Berlin-Tokyo military alliance. The Diet on November 29 unanimously voted to reincorporate in Finland, under military occupation and administration, those districts ceded to Russia in 1940. The Diet reportedly gave a unanimous vote of confidence to the Government's military and foreign policies, which called for annexation of Soviet territories on the basis of an undefined strategical frontier. In Independence Day declarations by President Ryti and Marshal Mannerheim, the Finns were told that they must fight on to final victory against the Soviet Union. However German reverses in Russia in December and the entrance of the United States into the war were followed by renewed pressure within Finland for cessation of hostilities.

Break with Britain. In January the British Government repeated its previous warning to Finland that navicerts for the passage of supplies through the British blockade would be granted only so long as Finland "refrains from any further unneutral act." The navicerts were accordingly withdrawn early in June, when the presence of German divisions in Finland became known. In mid-June three Finnish ships en route to Petsamo were intercepted and detained at a British port. Upon the outbreak of the fighting along the Russo-Finnish frontier, the Finnish Government expelled the British Consul General in Finland along with 120 Britishers who had volunteered for service with the Finnish armies against the Soviet Union in 1940. The British charged that 40 Blenheim bombers, lent by the British Government to Finland during the 1939-40 Soviet-Finnish war, were placed in the service of the German air fleet. Also that a children's home at Rovaniemi, built with British relief contributions, was put at the disposal of German troops. These developments were considered evidence of the dominant influence Germany had already acquired over Finland's internal affairs.

After Finland joined Germany in war on Russia and the Anglo-Russian alliance was concluded, relations between the Finnish and British Governments became steadily worse, although the majority of the Finns continued to show pro-British sympathies. On July 29 the Finnish Government took the initiative in severing diplomatic relations with Britain. A British air attack upon German ships and supplies at the Finnish port of Petsamo followed on July 30. Soon afterward the British

applied the full force of their naval blockade to Finland. On September 22 the British Government warned Finland that if it persisted in invading "purely Russian territory a situation will arise in which Britain will be forced to treat Finland as an open enemy not only while the war lasts but also when peace comes to be made."

The Finnish Government's reply of October 7 rejected this warning, pointing out that parts of Finnish territory were still in Russian hands. At the end of November a second British note informed Helsinki that the London Government would declare war unless Finland withdrew from all active participation in hostilities by December 5. When the Finnish Government declined to cease fighting, Britain declared war on December 6.

Relations with United States. Finland's alignment with Germany ended a long period of extremely friendly relations with the United States. On May 1, 1941, Finland agreed to pay the U.S. Government in 10 annual installments the \$235,398 war-debt payment due Dec. 15, 1940, but postponed in accordance with a joint resolution of the U.S. Congress (see the article on **WAR DEBTS**). In June Washington authorized Finland to postpone a payment due on war relief loans advanced by the Export-Import Bank of Washington in 1939 and 1940. President Ryti cabled "heartfelt gratitude" to President Roosevelt.

Upon Finland's involvement in the Russo-German conflict, the State Department announced that U.S. policy toward Finland would be "determined in the light of further information and future developments." On August 18 Washington transmitted the Russian peace offer to Helsinki, and when this was rejected joined with Britain in pressing Finland to end hostilities. On November 3 Secretary of State Hull publicly warned the Finnish Government that its course risked alienating American friendship, but his admonition was politely rejected in a Finnish note of November 11.

On November 25 the U.S. Secretary of War, Henry L. Stimson, said Finland's military threat to the Murmansk-Moscow railway, over which American supplies were reaching Russia, was directly "harmful to the interests of the United States." Secretary Hull on November 28 said that "every act of the Finnish Government since the delivery of its note (of November 11) has confirmed our apprehensions that it is fully cooperating with the Hitler forces." Finally accepting Finland as part and parcel of the Axis forces, the U.S. Government on December 6 placed 16 Finnish merchant ships in American ports under protective custody. They were taken over by the U.S. Maritime Commission on December 27.

Pressure on Sweden. Having cast its lot with Germany, Finland joined Berlin in bringing pressure upon Sweden to abandon its neutrality and participate in the war upon Russia. Under this pressure, the Swedish Government deviated from neutrality to permit passage of a division of German troops from Norway to Finland late in June, an act that drew a vigorous protest from London. It also authorized enrollment of Swedish volunteers for service in the Finnish army and reluctantly granted Finnish requests for foodstuffs and other supplies. However the Swedes clung to their neutral policy in all other respects.

Reconstruction. The Government's entrance into the war interrupted the gigantic task of reconstruction, which had claimed most of the nation's energies and resources since the peace treaty of Mar. 12, 1940 (see **YEAR BOOK** for 1940, p. 266). This

task was carried forward energetically during the first half of 1941 in the face of an acute food shortage and mounting economic and financial stress. Rations of foodstuffs were progressively reduced during the winter of 1940-41. A representative of the American Red Cross, returning from Finland in April, reported that Finnish workers were receiving less than 70 per cent of the calories needed. In mid-June a Finnish official reported a food shortage of about 40 per cent of the normal supply, with no one having enough to eat. This situation became worse in some respects during the latter half of the year.

To finance reconstruction and at the same time to check the inflationary trend already strongly in evidence, the Council of State on Jan. 13, 1941, authorized internal loans totaling 2,460,000,000 Finnish marks. Under this authority, a bond issue of 1,000,000,000 marks, the largest domestic loan in Finland's history, was offered on February 17 and was fully subscribed within four weeks. A 2,000,000,000-mark war loan was offered for public subscription September 15. The Diet on May 6, by a vote of 149 to 29, gave the Government virtually dictatorial powers over the economic system until the end of 1942. Among other things, it was authorized to regulate rents, prices, wages, tariffs, and labor conditions, as well as to conscript labor.

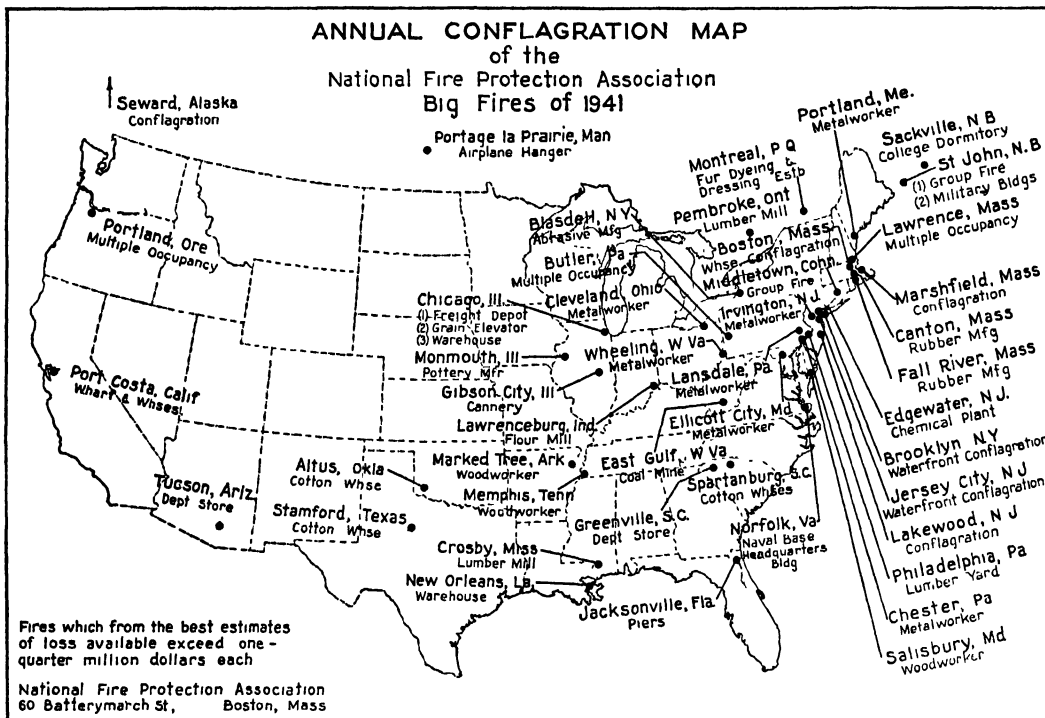
Part of the loan funds obtained went toward the purchase of armaments, the reorganization of the armed forces, and the construction of fortifications along the new Soviet-Finnish frontier. Even greater efforts went into the provision of new farms, occupations, and homes for some 470,000 refugees from the ceded territories, and the immediate expansion of the acreage planted to food crops. New factories, mines, railways, and hydroelectric plants were opened. Heavy payments were made, in cash and in bonds, under the law providing financial compensation for Finnish communities, organizations, and individuals whose properties were damaged or destroyed during the war of 1939-40.

Following reconquest of the territories ceded in 1940, refugees from the Karelian isthmus were authorized beginning August 4 to return to their former homes. By the end of October 40,500 persons, or about 10 per cent of the evacuated population, had returned. The renewal of warfare brought a tightening up of the censorship and of political as well as economic controls. On October 25 the parliamentary elections scheduled for 1942 were postponed until 1944. Heavy damage was caused to Helsinki by the blowing up of a munitions ship in the harbor on September 14. On March 7 Finland concluded an important bilateral trade accord with Germany.

See **GERMANY, GREAT BRITAIN, SWEDEN, and UNION OF SOVIET SOCIALIST REPUBLICS, under History; FASCISM; NAVAL PROGRESS; SOCIALISM; UNITED STATES under Foreign Affairs; WORLD WAR.**

FIRE PROTECTION. Fire protection and fire prevention are obviously of tremendous importance to a nation at war. War-time fire protection resolves itself into two principal problems: (1) Protection of military establishments and vital manufacturing facilities against destruction by fire due either to accidental causes, deliberate sabotage, or incendiary bombs; (2) protection of homes, commercial buildings, and stores of manufactured goods and foodstuffs where loss by fire has an indirect if not a direct effect upon the war effort.

During 1941, the most important aspects of fire control were concerned with civilian defense. The



extensive use of incendiary bombs as a weapon of modern warfare has served to focus public attention upon the destructiveness of fire and the need for some knowledge of fire prevention and protection. There has consequently been a large demand by the public as a whole for information of this kind.

With the organization of the Office of Civilian Defense in Washington, D.C., and state and local defense councils, the problem of strengthening existing fire-fighting forces in both equipment and manpower has been paramount. A survey made by the National Fire Protection Association disclosed that many fire departments are inadequately equipped and manned even for normal peace-time fire fighting. It was shown that in 365 cities of 20,000 or more population, 52 per cent of the pumps and ladder trucks are over 15 years old. While such aged apparatus is useful as reserve equipment, it can not be relied upon for front-line fire fighting. Clarification of the confused apparatus situation had not been carried through by the end of 1941, but much progress will doubtless be made in 1942. By action of the Priorities Board, new fire apparatus will be of standardized design with a minimum use of critical materials. It seems probable that a large quantity of standardized auxiliary equipment to meet emergency war needs may be purchased and provided to cities by the Federal government.

By the end of 1941 only a few cities had enlisted and trained any considerable number of auxiliary firemen, and this is also something which will doubtless develop rapidly during 1942. To provide a standard outline for training these auxiliaries, the National Fire Protection Association organized a Committee on Firemen's Training, the first endeavor of which is the preparation of a suitable training guide.

Fire losses for 1941 were \$322,357,000 or over one million dollars a month above the 1940 figure

of \$306,469,520, according to the National Board of Fire Underwriters. These figures are based upon notices of incurred loss received by insurance companies, members of the board, plus an allowance for unreported and uninsured losses. The accompanying table shows the monthly fire losses for both 1940 and 1941.

COMPARATIVE MONTHLY FIRE ESTIMATES

Months	1940	1941
January	\$36,260,650	\$26,470,000
February	34,410,250	26,102,000
March	29,788,800	31,471,000
April	26,657,190	29,330,000
May	23,446,590	25,637,000
June	19,508,000	24,943,000
July	20,322,800	23,698,000
August	20,722,100	24,122,000
September	21,198,000	24,668,000
October	22,091,140	30,833,000
November	23,449,000	23,822,000
December	28,617,000	31,261,000
Total (12 months)	\$306,469,520	\$322,357,000

According to the National Fire Protection Association, 48 fires occurred in the United States and Canada during 1941, each of which resulted in a loss of \$250,000 or more. Six of these occurred in Canada. This is an increase of 10 fires over the number reported for 1940 and is 12 greater than the average for the past five years. A total of 50 lives were lost in these fires, 21 fewer than were lost in the corresponding fires of 1940. The factors largely responsible for these fires were: inferior construction with large undivided areas and unprotected openings; excessive amounts of combustible stock subject to one fire; lack of adequate private fire protection facilities; delays in calling the fire department; and inadequate water supplies.

The largest fire of the year and the greatest single industrial loss in the United States on record occurred at Fall River, Mass., on October 11. The fire destroyed a large group of factory buildings

manufacturing rubber products and providing storage for some 18,000 tons of crude rubber. The loss from this fire approximated \$14,000,000.

The most recent study by the National Fire Protection Association of the distribution of fires by occupancies and causes discloses that for the year 1940 there were approximately 725,000 fires in the United States, about half of which occurred in dwellings. Careless smoking, sparks on combustible roofs, defective chimneys, defective heating equipment, and misuse of electrical equipment continue to be the principal causes of fire.

During 1941, firemen training activities reached a new high, both in the number of firemen trained and in the scope and quality of the training. More than 65,000 firemen from over 4,000 fire departments received training during the year under State-wide programs. This training is in addition to regular city fire department drill schools. Only four states, Arizona, South Carolina, Utah, and Idaho, do not now report some form of state-wide firemen's training.

Perhaps the most significant item in the field of publications was the book *Fire Defense* published early in 1941 by the National Fire Protection Association. This book provides a compilation of authoritative material on air-set fires, bombs and sabotage, civilian defense, fire fighting and the safeguarding of industrial production for war.

Several important new standards in the fire field were developed in 1941. These included standards on anesthetic gases and the prevention of hospital operating room explosions, trailer pumps and auxiliary pumping equipment, static electricity, and a suggested explosives ordinance for cities.

The States of Arizona, Ohio, Maryland, Minnesota, and Florida enacted satisfactory fireworks control legislation making a total of 14 States now having such laws.

Hartford, Conn., was the winner of the 1940 year-round fire prevention contest conducted by the National Fire Waste Council, while Memphis, Tenn., was the winner of the National Fire Protection Association Fire Prevention Week contest for 1941 in which 1,200 cities participated.

See BOMBS, CIVILIAN DEFENSE, OFFICE OF; INSURANCE, MINES, BUREAU OF. Also see illustrations facing page 189.

CHARLES SUMNER MORGAN.

FIRST AID. See BOMBS; CIVILIAN CONSERVATION CORPS, MINES, BUREAU OF, RED CROSS.

FISH AND FISHERIES. See ALASKA; FISH AND WILDLIFE SERVICE; ZOOLOGY. For duties on crab meat, see TARIFF COMMISSION.

FISH AND WILDLIFE SERVICE. The most important concerns of the Fish and Wildlife Service, U.S. Department of the Interior, that were distinctive of its fiscal year 1941 involved the relationship of the resources it handles to exigencies of national defense. The Service's efforts in this connection have been exerted in two ways: (1) By cooperating with every means at its command in the national defense program and (2) by taking every apparent precaution to safeguard the Nation's fish and wildlife resources against needless damage.

The emergency-period advantages of the recreational opportunities and the national pride that accompany an abundant wildlife have been emphasized. Estimates have been made of the possibilities for increasing the food supply from fisheries, which in 1939 produced 4,443,000,000 lb. of products valued at \$96,500,000. These estimates led to the conclusion that under conditions of wartime emer-

gency the yield could be increased to 4,628,000,000 lb. almost immediately and to 6,200,000,000 lb. over a period of years.

Special attention has been given to safeguarding food supplies by the control of animals that prey on livestock and rodents that destroy crops. In connection with the rodent-control work, an acute shortage of high-grade red squill, an important raticide, was noted as a result of the international situation, which has cut this country off from the Mediterranean source of supply. To meet this problem, scientists of the Service have developed a method for the practical fortification of low-grade red squill and, in cooperation with the Bureau of Plant Industry, U.S. Department of Agriculture, have taken steps to determine whether squill can be satisfactorily grown in the United States. Rat control is important at all times and especially necessary in connection with military operations.

Recognizing the wildlife danger from forces and interests ready to take advantage of any program that promises to divert attention from their own selfish activities, the Service has practiced and advocated alertness to prevent actions *disguised* as defense but designed to promote personal gain at the expense of natural resources. It has also been pointed out that misdirected zeal and inadequate forethought would result in unnecessary damage to wildlife by activities that are actually essential to defense. Such representations have received the support of conservationists throughout the country, and the necessity for precautions has been emphasized by the President and other leaders. The most definite action taken, following a request of the President, was the appointment of a liaison officer from the Service to keep informed of the activities of defense agencies that affect fish and wildlife.

Estimates compiled indicated that the big-game population of the United States in 1940 was nearly 5,850,000, of which more than 5,275,000 were deer. The annual waterfowl inventory in January, 1941, resulted in an estimate of more than 70 million ducks and geese, representing the sixth consecutive annual increase as a result of the restoration program, though the increase from the previous year's estimate of above 65 million was not so great as those noted formerly. Compilations of State reports indicated that in the 1939-40 seasons 7,646,193 persons paid a total of \$12,998,163 for hunting licenses. In the 1938-39 season, latest for which totals are available, 7,858,275 paid a total of \$10,837,168 for fishing licenses. Sales of the Federal stamp required of all over 16 who hunt migratory waterfowl continued to increase, a total of \$1,257,313 stamps having been sold in the 1940-41 year.

The Federal wildlife refuge system increased to a total of 267 refuges, with an acreage of 13,740,304. Output of fish and eggs at the 116 Federal hatcheries during the year ended June 30, 1941, approximated 6,020,000,000, a drop from the previous year's 7,400,000,000, attributed mainly to curtailment in the handling of fertilized eggs of the cod, haddock, and pollock off the New England coast. This offshore work has been considered as salvage and has been periodically adjusted to meet current conditions. Regulations governing migratory waterfowl hunting in 1941 again provided a 60-day hunting season in each of 3 zones.

The program for aiding the States in wildlife restoration became more extensive and more effective. The 46 participating States submitted and had approved 265 wildlife-restoration projects, involving Federal funds of \$2,223,486. The projects in this program, which provides for Federal payment

of 75 per cent of the cost of projects carried on by the States with Federal approval, included 73 for purchase of lands and waters adaptable as feeding, resting, or breeding places for wildlife; 101 for development of land and waters and improvement of conditions to benefit wildlife; 79 for surveys and investigations; and 12 for needed direction and supervision.

Early in 1941 The Macmillan Company published *Wildlife Conservation*, an effort on the part of the Service Director "to put into simple language the basic facts in this field." The 28 official printed publications of the 1941 fiscal year included the following: Administrative Reports 40 and 41, *Alaska Fishery and Fur-Seal Industries, 1939* and *Fishery Industries in the United States, 1939*; Wildlife Research Bulletins 2 and 4, *Food Habits of the American Coot with Notes on Distribution* and *Food Habits of the Coyote*; Wildlife Circulars 6 and 11, *The House Rat and Wildlife of Atlantic Coast Salt Marshes*; and Conservation Bulletin 7, *Plants useful in Upland Wildlife Management*.

IRA N. GABRIELSON.

FLAX. Flaxseed production in the United States in 1941 was estimated by the U. S. Department of Agriculture to total 31,485,000 bu. from 3,202,000 acres as compared with 30,886,000 bu from 3,180,000 acres in 1940 and nearly three times as large as the 1930-39 average production of 11,269,000 bu. Increase in production over 1940 was attributed to the increase in harvested acreage outside of the usual producing States (Minnesota, South Dakota, North Dakota, and Montana), as well as high yields in the Dakotas. Acre yields continued above average, 9.8 bu. versus 9.7 in 1940. Leading flax States were Minnesota with 14,858,000 bu., North Dakota 4,576,000, California 3,267,000, Iowa 3,438,000, South Dakota 2,210,000, and Kansas 1,144,000 bu. The season average price per bushel received by farmers was \$1.725 and the value of production was estimated at \$54,311,000 in 1941 compared to \$1.416 and \$43,738,000 in 1940.

Canada produced 6,473,000 bu. in 1941, and in 1940-41 Argentina produced 57,461,000 bu., U.S.S.R. 29,526,000, India 17,214,300, and Uruguay 2,165,000 bu.

FLOOD CONTROL. Recurring floods in all parts of the United States cause such great economic losses that the Federal government and various authorities are giving increased attention to means of remedying the serious situation. The losses are in deaths, personal injuries, public health and welfare, damage to property and crops, and interference with business and industry. In the aggregate, the money loss is enormous. The Flood Control bill passed by Congress in 1941 carried a total of \$272,000,000. But in view of the war emergency, many of the new works proposed will have to be deferred, and will be included in a program for post-war construction to provide employment when the vast program of war material production is ended.

Most of the projects of this kind are designed by the Corps of Engineers, U. S. Army, and are carried out under its direction, due to its control over navigable streams and their tributaries. The cost is divided between the Federal government and local communities or organizations. A complication in the financing is that since a project may be undertaken as a partnership or cooperation including the Federal government, State governments, and local agencies or authorities, it is neces-

sary to determine the money values of the losses and damage, as well as of the expected benefits, direct and indirect. The present flood-control bill requires local interests to meet the cost of lands, which is a change from the earlier financing arrangements. Funds appropriated in the Corps of Engineers for flood control during the fiscal year 1941 amounted to \$96,763,400. Its work included 155 of the total 485 general flood control projects, while local protection works were under construction at 126 widely dispersed localities.

Many of the projects are of great extent, involving control of main and tributary streams of entire drainage areas or watersheds by means of dams, levees, channels, and other works. To protect the city of Pittsburgh from floods originating on the tributaries of the Allegheny and Monongahela rivers, a series of ten detention dams is planned and has been approved. Of four dams now in service, two were completed in 1941 (on Mahoning Creek and the Loyalhanna River); a fifth is under construction, while studies and plans are being made for the others.

Although the flow of the Ohio River is now controlled by a system of dams with navigation locks, many cities along its course need protection for low-lying lands. In some cases this is provided by flood walls along the water front, as at Portsmouth, Louisville, and Paducah. At Cincinnati, the flooding of an industrial district along Mill Creek by high water in the river will be prevented by a dam with flood gates at the mouth of the creek. Normally, the flow of the creek will pass through the gates, but when these are closed to exclude flood water the flow will be pumped over the dam into the Ohio.

For flood control of the Susquehanna River, to protect a number of cities in an industrial district in the southern part of New York State, seven dams to form detention reservoirs are to be built, supplemented by levees and local protection works, in the upper part of the drainage area, at a cost of \$27,000,000. One dam was completed in 1939 and another is scheduled for March, 1942. The local works have been completed at three cities and are under way at six other cities.

Another extensive project now under construction is for control of the Connecticut River. Along its course of 300 miles are a number of important cities and manufacturing centers. The cost of 20 dams for detention reservoirs, together with levees, flood walls and other works is estimated at \$47,000,000, but as the flood damage in one year (1936) was estimated at \$25,000,000, the economy of the protection work is evident.

On the Lower Rio Grande, from Hidalgo, Texas, to the Gulf, flood protection works include a system of levees and floodways, these latter being channels excavated as branches to connect the river with small lakes which thus serve as detention reservoirs and relieve the main channel. Similar works are being carried out by the Brazos River Conservation and Reclamation District.

Protection for Houston, Texas, is to include two detention reservoirs on Buffalo Bayou, 15 miles west of the city, their discharge being diverted through a new channel south of the city to Galveston Bay. Another reservoir on White Oak Bayou will divert the flow through a channel discharging into the San Jacinto River. The cost will be \$32,000,000, and the first step will be the Barker Dam on Buffalo Bayou, costing \$3,500,000. Part of the funds will be provided by the Harris County Flood Control District.

While plans have been made for enlarging the

channel of the Los Angeles River at Los Angeles, Calif., in order to provide for flood flows, a flood occurred in March which caused the fall of a railroad bridge. In Orange County, adjacent to Los Angeles, the Prado Dam for flood control on the Santa Ana River was completed early in 1941. The Conchas Dam on the South Canadian River, in New Mexico, forms a reservoir of which one-third of its capacity is kept empty for receiving and storing flood waters.

Flood control and protection works, in conjunction with power development, irrigation and inland navigation, are included in a comprehensive project for regulation of the Willamette River, in Oregon. The Fern Dam was completed in 1941 and two others are under construction. As the valley is subjected to floods nearly every year, this protection is needed for its potential agricultural and industrial development.

Flood control throughout the Tennessee River valley is one of the important objectives of the Tennessee Valley Authority, and it may extend its activities into North Carolina, where flood control is needed on the French Broad River, a tributary of the Tennessee. Surveys have been made for such works in the western part of the State, adjacent to Tennessee, where floods caused severe damage in 1940. Another project in North Carolina is that of the PeeDee River, under the direction of the U.S. Department of Agriculture.

Railroads in districts subject to flooding have to spend large sums for the protection of their lines or heavy periodical expenses for repair and reconstruction. But a rather different aspect of railroad work is that of the Atchison, Topeka & Santa Fe Railroad. As a result of frequent and recurring damage to its line in mountain regions by floods which cause washouts and endanger bridges, the railroad has carried on a program of protection work which includes changes in line to avoid troublesome or dangerous places, changes in river channels near the line, the construction of dikes and jetties in streams paralleling the line, and the facing of fills and banks with stone or concrete revetment to prevent erosion.

See AQUEDUCTS; COAST GUARD; DAMS; FLOODS.
E. E. RUSSELL TRATMAN.

FLOODS. There was no outstanding flood of major importance in the United States during 1941, but the year had the usual number of local and minor to moderate floods. At the beginning of the year there was a minor flood in progress in the Pearl River in Mississippi and Louisiana. In the month of February the outstanding flood was one in the Sacramento River in California; this flood was caused by heavy rains during the preceding three months which culminated with unusually heavy rains in the early part of February. About \$500,000 damage was done by this flood in the Sacramento Valley. This February flood was followed by another equally severe in March, and by a third, though less severe, in April. In the mountainous portions of the Sacramento Valley there was much damage done to highway embankments, and in the lower part of the Valley where much of the land is cultivated and is protected by levees the seepage was great enough, due to the prolonged high water, to kill many fruit trees in lowland orchards.

In April there were severe floods in the streams of southwestern Missouri and the adjacent parts of Arkansas, Oklahoma, and Kansas. At this time floods were especially high in the Osage, Gasconade, and Neosho Rivers, where record or near

record stages occurred; lesser overflows occurred in the Meramec, Bourbeuse, Cimarron, Verdigris, North Canadian, Poteau, White, and lower Missouri Rivers. Practically every small stream in southwest Missouri overflowed and the greatest

TABLE OF FLOOD LOSSES IN THE UNITED STATES DURING 1940

Drainage	Reported Losses * Property	Lives
St Lawrence	0	2
Atlantic Slope	\$7,553,000	16
Gulf of Mexico	13,118,233	7
Mississippi	3,301,965	7
Ohio	8,077,275	28
Pacific Slope	8,416,010	0
Total	\$40,466,483	60

* Probably about 75 per cent of actual

damage was to the secondary road system operated by the counties, and to farm lands which were badly eroded by the rains. The water plant at Joplin was forced to close, and heavy damage resulted at Monett by the flooding of stores. Houses and mines in the Webb City-Oronogo district were overflowed and rendered useless, and much livestock was swept away. While most damage was caused by small streams, river stages were quite high and Wyandotte, Okla., on the Neosho River had the highest stage of record.

On May 22 there was a remarkably sudden flood in the Pecos River in New Mexico, this flood occurred at 2 a.m. and was caused by excessive rainfall in the mountains west of Carlsbad. The greater portion of the water came down Hackleberry Draw and Dark Canyon, and the river stage at Carlsbad rose from 8 feet to 20 feet in two hours, in spite of this unusual rise of water during the night no lives were lost but considerable damage was done to property. At 10 a.m. on May 23 the second flood came down on Carlsbad from the same source as the first, but the waters reached a considerably higher stage than in the first flood. Five people were drowned, 111 homes were completely destroyed, and 210 homes were damaged badly and about 1,500 people were left homeless.

Heavy rains with resultant floods occurred over the watersheds of the Guadalupe, Nueces, Brazos, and Sabine Rivers in Texas early in May. Most of the damage from these floods was to farm lands and pastures. There was also flooding in the Colorado River in Colorado at this time.

There were heavy rains over the Monongahela Basin in Pennsylvania and West Virginia on the 3d, 4th, and 5th of June. At the town of Brave, Green County, where Dunkard Creek is normally about 30 feet wide, and the bed of the creek about 15 feet lower than the general level of the ground, in 30 minutes the water rose over the banks and over the tops of automobiles parked along the adjacent highway. Similar sudden rises took place in other tributaries of the Monongahela River during these three days; this river reached a crest of 35.8 feet at 6 p.m. on the 4th at the Greensboro, Pa., gage. This was not an unusually high crest but the damage was much greater than is usual for such stages, due to the swiftness of the Monongahela. It was reported by river men that the river was never known to be so swift. The result was an unusually heavy loss to shipping interests.

At the time of the floods in the Monongahela River Basin there was also severe local flooding in several of the smaller tributaries of the Ohio between Wheeling and Huntington, W.Va. Some of these tributaries had the highest stages since the great flood of 1913; it will be recalled that in this reach of the Ohio the 1913 flood was higher than

the great 1937 flood. Although the tributaries had such high stages this year, the Ohio River itself did not rise above its flood stage.

There were important floods during the summer months and again in October in the rivers of Kansas, Oklahoma, and Texas. The Arkansas River crested at Webbers Falls, Okla., on November 1, with a stage of 35.8 feet and at Fort Smith, and Van Buren, Ark., on November 3, with stages of 37.3 and 35.8 feet, respectively. These stages are the highest for over a century (the previous highest being in 1833) and exceed the stages of the April, 1927 flood at these places.

In November there was a flood in the Willamette River in Oregon. The area covered by this flood extended from the east side of the Willamette River in the vicinity of Corvallis to slightly above the junction of the Row River with the Coast Fork. Flood control dams under construction on the Coast Fork and Long Tom Rivers were completed to such a stage that they proved their effectiveness as flood barriers. The control of water at these two dams averted serious industrial and agricultural losses in the vicinity of Cottage Grove and Monroe. Extensive riprapping along the Willamette River, constructed by the U.S. Engineers, materially reduced bank erosion below Eugene. Channel development from the mouth of the Willamette River south to Albany aided considerably in speeding up run-off, thereby reducing flood crests in these reaches of the river. The streams which contributed the greatest volume of flood water were the Middle Fork of the Willamette and the Row River, although the McKenzie, Calapooya, and Santiam were very important factors in producing the flood conditions. Maries, Luckiamute, Yamhill, Molalla, Tualatin, and Clackamas Rivers, while contributing some water, could be considered as rather minor factors in this flood. See also FLOOD CONTROL.

RICHMOND T. ZOCH.

FLORICULTURE, FLOWERS. See BOTANY.

FLORIDA. A south Atlantic State. Area: 58,560 sq. mi., including 4,298 sq. mi. of inland water, but excluding Atlantic coastal waters, 37 sq. mi.; and Gulf of Mexico coastal waters, 1,698 sq. mi. Population: (1940 census) 1,897,414. The urban population comprises 55.1 per cent of the total (U.S. average, 56.5 per cent); non-white population, 27.0 per cent (U.S. average, 10.2); elderly (65 years and over), 6.8 per cent. Florida ranks 21st among the States in area, 27th in population, and 30th in density, with an average of 35.0 persons per square mile. The capital is Tallahassee with 16,240 inhabitants; largest city, Jacksonville, 173,065. There are 67 counties and 20 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Colin English, Superintendent of Public Instruction, there were 397,900 pupils enrolled in the public schools of Florida during the school year, 1939-40; 250,266 in elementary schools, and 147,634 in secondary schools. Teachers and principals numbered 13,629 and received an annual average salary of \$1,009. Total expenditures for the year, including capital outlay and debt service, were \$25,167,310.

Transportation. State highway mileage in 1939, including streets under State control, totaled 7,453, of which 6,932 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 503,678; 413,723 were

private and commercial automobiles, 1,697 busses, and 79,790 trucks and tractor trucks. Gross motor-fuel consumption was 408,124,000 gallons. Net motor-fuel tax receipts were \$27,448,000, the rate being seven cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$8,002,000.

Railways of all classes extended 5,225 miles (Dec. 31, 1939), 2.22 per cent of the total mileage in the United States. Class I steam railways (3,904 miles) reported 14,192,632 tons of revenue freight originating in Florida in 1940 and 14,124,996 tons terminating in Florida. There are 113 airports and landing fields in the State (28 lighted fields) and 41 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 500 civil aircraft in the State and 1,859 airline transport, commercial, and private pilots (1,324 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 1,521,000, as compared with 1,510,300 acres in 1940. According to the latest census, there are 62,248 farms, valued at \$324,377,874, averaging 133.9 acres each. Farm population numbered 308,369 or 16.3 per cent of the total. Leading crops with production were: Oranges, \$39,933,000, 31,300,000 boxes (estimated); commercial truck crops, \$36,112,000, grapefruit, \$16,162,000, 21,400,000 boxes; corn, \$5,270,000, 6,588,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 2,083 manufacturing establishments in Florida, employing 52,728 wage earners who received \$37,883,204 in wages for the year. The total value of products was \$241,538,534; value added by manufacture, \$118,015,863.

Mineral Production. The leading mineral product is phosphate rock, of which 2,845,012 long tons were produced in 1940, valued at \$7,741,177 (2,678,784 long tons, \$7,893,457, in 1939). The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$13,060,453 or .31 per cent of the United States total.

Trade. According to the 1940 census there were 2,696 wholesale establishments in Florida, employing 32,442 persons, reporting net sales for 1939 of \$526,889,000 and annual pay roll of \$34,405,000. There were 28,614 retail stores with 73,190 employees, reporting sales of \$614,464,000 and pay roll of \$64,244,000. Service establishments numbered 8,235, employing 20,765 persons for \$15,113,000 per year, and reporting a business volume amounting to \$46,558,000. The leading business center of the State is Miami which reported wholesale sales of \$88,065,000, retail sales of \$103,215,000, and \$10,702,000 receipts for its service establishments. Jacksonville reported sales of \$151,633,000 wholesale and \$73,951 retail, Tampa, \$87,997,000 and \$46,134,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Florida was \$33,656,000. Under the Social Security program, financed by Federal funds matching State grants, 37,688 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$13.14 (U.S. average pension, \$21.08); 10,974 dependent children in 4,235 families received average monthly payments of \$22.32 per family (U.S. average, \$32.73); and 2,536 blind persons received \$13.93 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 5,880 and received \$7.18 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal

work programs was as follows (with total earnings for the month in parentheses): CCC, 3,330 (\$221,000); NYA student work program, 3,451 (\$25,000); NYA out-of-school work program, 6,638 (\$111,000); WPA, 25,372 (\$1,547,000); other Federal emergency projects, 257 (\$27,000); regular Federal construction projects, 13,684 (\$1,738,000). The Farm Security Administration certified subsistence payments totaling \$7,000 for the month to 159 cases.

Legislation. The Legislature convenes in regular session on Tuesday after the first Monday of April in odd years. It is composed of 38 Senators and 95 Representatives, all of whom are Democrats. The following is a summary of important measures enacted into law during the 1941 session (April 6-June 6), as supplied by Florida State Librarian, W. T. Cash:

Perhaps the greatest innovation in legislation enacted by the Florida Legislature of 1941 was the passing of an Act providing for a State Administered Probation and Parole Commission under the direction of three Parole Commissioners selected by the Board of Commissioners of State Institutions (the Governor and his Cabinet), after the holding of competitive examinations taken by those who are candidates for places on said Parole Commission.

In order to provide more money for old age pensions, an extra five per cent tax was made on race track bets. It is estimated that this will increase money for old age pensions from \$3,800,000 per year to more than \$7,000,000 and make the average old age pension recipient get about \$23 per month instead of something like one half of that much at the present time.

An important taxation passed by the Legislature provides that all property must be assessed at its full cash value. As a result of this measure and taking into consideration assessments made since the Legislature adjourned, it is believed that Florida tax assessments for the present fiscal year will run to over two billion dollars instead of one fifth of that amount at the present time.

A series of bills passed by the Legislature set up new regulations for the citrus industry and provided for the appointment of an entirely new Citrus Commission. The Workmen's Compensation Law was so amended as to bring 30,000 persons employed in the citrus industry and not previously covered by Workmen's Compensation benefits under the scope of the law. The Legislature authorized the refunding of the seventeen million dollar Everglades Drainage District bill. It created a State Economic Advancement Council, with an annual appropriation of \$50,000, to bring new industries to the state, and a State Improvement Commission with authority to build toll roads, bridges, and other facilities on a self-liquidating basis. The salaries of all Cabinet officials were raised from \$6,000 to \$7,500 a year. At the Governor's request, his salary remains at \$9,000 per year as before.

Among the principal appropriations, not usually carried in biennial appropriations, bills were \$330,000 for an addition to the State Capitol, \$250,000 for an addition to the Supreme Court Building, and \$100,000 for the erection of a Stephen Foster Memorial Building in the town of White Springs, Florida. An Act was passed to divert \$729,000 received under Murphy Act land sales to the General Revenue Fund. The Murphy Act passed six years ago provided that land on which taxes were delinquent could be sold to the highest bidder; the greater part of the delinquent land was redeemed under this Act; but the unredeemed part, having reverted to the State, is being gradually sold and it is from receipts of these sales that the \$729,000 mentioned above was diverted.

One Act passed requires the State Road Department to take over and maintain city streets which are connecting links in the State highway system. The prices of motor vehicle tags were increased \$5 each for most cars. Each motor vehicle driver will now have to pay \$1 instead of 50 cents as previously for license. The Legislature provided for a tax of \$5 per one thousand dollars of stock in retail stores, but it repealed the one half of 1 per cent gross receipts tax. The 7 cents per gallon tax on gasoline was reenacted. A speed limit of 45 miles per hour for automobiles was raised to 55 miles per hour except for night driving which remains 45 miles per hour.

Under another Act of the 1941 Legislature, state supervision of county and school districts ad valorem tax assessments, collections, and financial budgets must have state supervision. A series of bills passed provide for more adequate State defense in case of emergency. Under the terms of another Act, salaried officials appointed by the Governor must have terms running concurrently with his. This includes such positions as: Members of the State Road Department, Hotel Commissioner, Conservation Commissioner, Executive Secretary, Fresh Water Fish and Game Commissioner and a few others.

Finances. Total tax collections in Florida for the fiscal year ending in June, 1940 were \$80,697,000. Total sales taxes amounted to \$29,772,000, including motor fuel, \$25,511,000. Taxes on specific businesses ran to \$12,657,000, general and selective property, \$2,677,000, unemployment compensation (1941), \$7,290,000. Cost payments for the operation of general government totaled \$51,043,000 in 1939, the latest year available. (Revenues for the general government for that year were \$67,423,000.) Cost of operation per capita was \$27.98.

Officers and Judiciary. The Governor is Spessard L. Holland (Dem.), inaugurated in January, 1941, for a four-year term; Secretary of State, R. A. Gray; Attorney General, J. Tom Watson; State Auditor, W. M. Wainwright; State Comptroller, J. M. Lee. Chief Justice of the Florida Supreme Court is Armstead Brown; there are five associate members elected by popular vote for six-year terms.

See CHILDREN'S BUREAU; FIRE PROTECTION, LABOR LEGISLATION; MUNICIPAL GOVERNMENT.

FLOUR MILLING. See BUSINESS REVIEW under *Other Industries*.

FLUORESCENT LAMPS. See ILLUMINATION. For **FLUORESCENT MATERIALS**, see CHEMISTRY, INDUSTRIAL.

FLUORIDE. See DENTISTRY.

FM BROADCASTING. See RADIO.

FOOD AND DRUG ADMINISTRATION. A material increase in regulatory activity characterized the work of the Food and Drug Administration during the fiscal year 1941. It marked the first complete year in which all provisions of the Food, Drug, and Cosmetic Act of 1938 were enforced. The period of adjustment provided by Congress to afford manufacturers time to meet new labeling requirements had ended. Exploratory work and the training of new personnel by the Administration in 1940 had increased effective enforcement during 1941.

The elimination of filthy food from the market, the prosecution of the responsible manufacturers and shippers, and educational work to improve sanitary conditions in food-processing plants featured the food enforcement program. Standards for various types of cheese, flour, cream, and processed milk, jams and jellies, and oleomargarine were promulgated. Investigation of 57 food-poisoning outbreaks disclosed three major causes: Under-processing of home-canned products, insanitary handling or lack of proper refrigeration in the home, and the accidental mixing, also in the home, of some poisonous insecticide with food materials.

An emergency drug measure was the nation-wide investigation by the Food and Drug Administration and cooperating city and State officials to locate and remove from commercial channels thousands of sulphathiazole tablets dangerously contaminated with phenobarbital, a highly potent sedative. Increased regulatory attention was given to dangerous drugs to prevent their indiscriminate distribution to lay users. A greater number of court actions than in 1940 involved the shipment of proprietary medicines bearing false and misleading claims for a great variety of diseases and inadequate warning statements.

Seizure of over 17,000 units of a poisonous permanent-wave solution in possession of some 500 beauty shops, and embargo by State authorities of material on hand in the factory, constituted the outstanding cosmetic enforcement work in 1941. Other dangerous cosmetics seized were eyelash dyes containing toluenediamine and an injurious product to be used for the removal of stains from the teeth.

Samples of 31,723 domestic foods, drugs, devices, and cosmetics were collected and examined during the year. Seizure of 2,016 violative interstate shipments resulted, in contrast with 1,697 in 1940. Criminal prosecution was instituted against individuals or firms responsible for 1,155 shipments alleged to be in violation of the act, as compared with 337 shipments in 1940.

Imported products from new sources resulted from chaotic shipping conditions occasioned by the war, necessitating increased regulatory attention. Inspections of 15,434 import shipments were made and 2,605 violative lots were refused entry.

Other statutes enforced by the Administration during the fiscal year 1941 were the Tea Act, Filled Milk Act, Caustic Poison Act, and Import Milk Act. June 30, 1941, ended the first year in which the Food and Drug Administration operated as a unit of the Federal Security Agency.

WALTER G. CAMPBELL.

FOOD-FOR-FREEDOM CAMPAIGN. See AGRICULTURE, U.S. DEPARTMENT OF.

FOOD INDUSTRY. See AGRICULTURE, BUSINESS REVIEW; MARKETING.

FOOD POISONING. See FOOD AND DRUG ADMINISTRATION.

FOODS, FOODSTUFFS. See AGRICULTURE; DAIRYING; HORTICULTURE; LIVESTOCK; LIVING COSTS FOR FROZEN FOODS, see AGRICULTURAL COOPERATION.

FOOD SHORTAGES. See each of the belligerent nations under *History*. Compare RATIONING.

FOOD STAMP PLAN. See AGRICULTURE, U.S. DEPARTMENT OF; DAIRYING; LIVESTOCK.

FOOTBALL. The sport of football in 1941 stretched from the multitudinous all-star games of late August to New Year's Day, and merely proved that the professional game carries greater appeal than the college game upon which the sport is built. The populace seemed to demand extreme excellence and as a result the attendance at colleges which didn't foster all-winning elevens fell off, and the professionals prospered thereby.

The year produced what qualified experts called the greatest football team of all time, the holdover professional champions of the National Football League, the Chicago Bears. The Bears waddled through nineteen games with one loss, that a surprise defeat by the Green Bay Packers, who were smothered later in the autumn when the teams met for the third time, in a playoff game for the western title. Then the Bears whipped the New York Giants, Eastern title holders, in the finale. With Sid Luckman, George McAfee, Bulldog Turner, Norman Standlec, Gallarneau, George Musso and the like performing, George Halas, coach and owner of the Bears, was said to have developed football to its highest degree of excellence. And this feat made professional football, for the first time, overshadow the college game.

In the college ranks, the teams of Duke University, undefeated and untied, Fordham University, surprisingly beaten by the University of Pittsburgh, the University of Minnesota, Notre Dame University, Oregon State University, Duquesne University, Texas University, and the University of Missouri stand out above all others. The Minnesota team, which kept intact the unbeaten skein of 1940, was adjudged the best team of the year. Led by Bruce Smith, a remarkable backfield man, the Gophers romped through a tough schedule, beating such fine outfits as those fielded by Washington, Michigan, and Northwestern en route to the title. The Notre Dame team was held to a tie by a sur-

prising Army eleven on a soggy field, but walloped Navy and all other opponents. The Fordham team lost to Pittsburgh, but whipped all other foes from all sections of the country. The Oregon State team, despised in early season predictions, lost twice in the Pacific Coast Conference, but had the best record at the end and thus succeeded Stanford in the Rose Bowl, which was transplanted to Duke's campus in North Carolina under last minute directions by West Coast military authorities when the war came. Duquesne, threatening to abandon the sport, had an undefeated and an untied season. Texas was hailed as the powerhouse of the nation until late in the year when it was tied and then beaten, later rallying to wallop Oregon, and beaten a whisker by Oregon State. Missouri, Big Six champion, waded through opposition with ease, losing only to Ohio State in the first game of the campaign, and was chosen to play Fordham in the Sugar Bowl in New Orleans in 1942. Texas A and M. won the Southwestern Conference title, Mississippi State the Southeastern championship; Tulsa University the Missouri Valley honors and Utah took the title in the Rocky Mountain Conference.

Individual players of headline excellence were scarce, with Smith of Minnesota winning most of the commercial post-season medals, and lots of plaudits going to Bill Dudley of Virginia, the year's top scorer, Steve Filipowicz, Fordham's fullback, and Endicott Peabody III, Harvard's great guard. Frank Leahy, transplanted from Boston College to Notre Dame, was considered the outstanding coach of the season. See RADIO PROGRAMS.

CASWELL ADAMS.

FOREIGN BROADCAST MONITORING SERVICE. See DEFENSE COMMUNICATIONS BOARD.

FOREIGN EXCHANGE. See BANKS AND BANKING; the countries under *Finance*. Compare EXCHANGE CONTROL.

FOREIGN RELATIONS. See UNITED STATES under *Foreign Affairs* and the foreign countries under *History*; also, PAN AMERICANISM.

FORESTRY, FOREST SERVICE. See AGRICULTURE, U.S. DEPARTMENT OF. FOR FOREST PRODUCTS, see LUMBER.

FORMOSA (TAIWAN). An island near the southeast coast of China, ceded to Japan by China in 1895. Total area, including the Pescadores, 13,889 square miles. Total population (census of October, 1940), 5,872,084. Chief towns (1935 census): Taihoku (the capital), 278,446, Tainan, 111,959, Keelung, 84,978; Takao, 83,735. The chief agricultural products are rice, sugar, tea, sweet potatoes, ramie, jute, and tumeric. Camphor is obtained from the forests under a government monopoly. Livestock (1937); 1,849,195 swine, 282,101 buffaloes, 76,341 cattle, and 70,384 goats. Gold, silver, copper, and coal are the main minerals. Trade (1939): Y408,649,840 for imports and Y592,938,199 for exports (yen averaged \$0.2596 for 1939; \$0.2344, 1940). Budget (1940-41): Y269,457,562. Governor General, Adm. Kiyoshi Hasegawa succeeded Nov. 26, 1940.

History. The Japanese Ministry of Overseas Affairs announced on Dec. 18, 1941, that 319 persons were killed, 437 persons were injured, and 1,768 homes were destroyed by an earthquake in southern Formosa on Dec. 17, 1941.

FOUNDATIONS. With increasing heights and weights of bridges, buildings, dams and other structures, and the frequent necessity of placing many of these structures on soils of inferior quality and reliability,

there has come more intensive study of the character of the strata at individual sites. Inadequate knowledge of these conditions may result in uneven settlement of the structure, and possibly in expensive subsequent repair work. Thus, settlement has caused considerable damage to the costly main building of a New York airport. In a suit by a contractor who found underground conditions very different from what he had been led to expect, the court awarded him extra pay to cover the additional cost of his foundation work.

To insure against leakage under the Merriman earth-fill dam, for the new Delaware River water supply for New York City, pneumatic caissons have been sunk to unusual depths to reach solid rock and form the foundation for the concrete core wall of the dam. On the other hand, the Hales Bar dam on the Tennessee River, completed in 1914, has given continual trouble due to heavy leakage through the seamy rock on which it is built. In recent years much costly work has been done, with more or less effect. A deep trench along the upstream side of the dam is now being put down to solid rock at depths of 55 to 110 ft. below the river bed. This is to be filled with concrete to form an impervious wall and so stop the underground flow of water. This work is to be finished in 1942.

A remarkable recent development in the exploration of underground conditions is the use of geophysical methods for creating and recording waves of sound, electricity, magnetism, or radioactivity through the soil, and determining from their speed the character of the soils traversed. Some of the methods are based on seismic principles used in recording the travel of earthquake shocks. In this class is an electrical resistivity method employed to determine the depth of rock below the surface along the new 26-mile railway to Fort Leonard Wood, in Missouri, during 1941, where time did not permit the use of test borings. This system of exploration was developed in the search for oil and ore deposits, but is being applied increasingly to foundation work. Closely allied to such studies is the study of soil mechanics, to determine the load-bearing capacities of different soils.

In studying sites for dams on the Willamette River, in Oregon, special apparatus was developed for taking photographs in the drill holes to show the varying formations. For a grain elevator at Buffalo, N.Y., wells 3 ft. in diameter were drilled to rock at a depth of 52 ft., and each well was inspected by a man lowered into it, to insure that there were satisfactory conditions at the bottom. The wells were filled with concrete to form foundation piers. Similar piers for a warehouse at the Navy Yard in Brooklyn, N.Y., were formed by sinking wells 140 to 160 ft. to rock and then 6 ft. into the rock. A steel H-beam was placed as a core in the center of the well, which was then filled with concrete.

Heavy machinery, such as rolling mills and machine tools, require very substantial foundations, since both weight and vibration must be considered. For a new boring machine at the Pittsburgh works of the Westinghouse Electric & Manufacturing Co., weighing 350 tons alone, or 650 tons when loaded with a large casting to be bored, the foundation is a heavy slab of reinforced-concrete, 40 ft. in diameter, capping a group of 120 steel pipes 10-in. in diameter driven to a depth of 30 ft. and filled with concrete. Foundation design was of prime foundation for a new steam power station at Los Angeles, since the delicately balanced turbines would be affected seriously by any slight tilting from uneven settlement. Furthermore, the founda-

tions had to be earthquake resistant. Excavation was carried down to a satisfactory stratum on which to place very large concrete footings which were connected together, except that those for the boilers and turbines were independent of those for the building, so as to prevent transmission of vibration.

Difficulties occur where the soil is wet and unstable, and where new foundations must be close to and deeper than those of adjacent structures. Foundations for an addition to a New York hospital had to be sunk considerably below those of the older buildings, and the concrete slab for a warehouse at Buffalo was placed 10 to 15 ft. below the foundations of adjacent buildings, including a brick smoke-stack 175 ft. high. Realizing the importance of accurate knowledge of foundation conditions, the Department of Public Works, of New York City, has undertaken a systematic program of test borings at all sites for large buildings and other construction works.

E. E. RUSSELL TRATMAN.

FOUNDATIONS AND TRUSTS. See PHILANTHROPY.
FOUR FREEDOMS. See UNITED STATES under *The President and Foreign Affairs*.

FRANCE. A state of Western Europe. As a result of the German invasion of May-June, 1940, the capital was transferred from Paris to Vichy. German and Italian troops remained in occupation of approximately one-half of France from the commencement of the armistice on June 26, 1940.

Area and Population. Through the annexation of Alsace-Lorraine by Germany in 1940, France lost 5,605 square miles of territory and a population of 1,915,627 (1936 census figures). This left an area of 207,117 square miles and a population of about 40,000,000 (on Jan. 1, 1939, the estimated population was 41,980,000). The population of the pre-war area of France as of Apr. 1, 1941, was estimated at 39,302,511 (excluding war prisoners in Germany). The live birth rate in 1939 was 14.6 per 1,000; death rate, 15.3 (including war losses) against 15.4 in 1938. In 1938 deaths exceeded births by 34,741. At the 1936 census there were 2,453,507 foreigners in France, United States citizens residing there on Jan. 1, 1941, numbered 3,000. On the basis of the number of ration cards issued, German occupational authorities in February, 1941, estimated the population of Paris, with suburbs, at 4,247,957. Populations of the chief cities at the 1936 census were: Paris proper, 2,829,748 (1,051,046 on July 7, 1940, before the return of refugees from Southern France); Marseille, 914,232; Lyon, 570,622; Bordeaux, 258,348; Nice, 241,916; Toulouse, 213,220; Lille, 200,575; Nantes, 195,185; Strasbourg, 193,119; Saint-Etienne, 190,236; Le Havre, 164,083; Toulon, 150,310; Rouen, 122,832; Nancy, 121,310; Reims, 116,687; Roubaix, 107,105; Clermont-Ferrand, 101,128.

Colonial Empire. The colonies, protectorates, dependencies, and mandated territories of France had a total area of some 4,617,579 square miles and a total estimated population of 70,000,000 in 1938. See the separate articles in this YEAR BOOK covering each of the following divisions: ALGERIA; CAMEROUN, FRENCH, FRENCH EQUATORIAL AFRICA; FRENCH GUIANA, FRENCH INDIA; FRENCH INDO-CHINA; FRENCH OCEANIA; FRENCH SOMALILAND, FRENCH WEST AFRICA; GUADELOUPE, MADAGASCAR; MARTINIQUE; MOROCCO; NEW CALEDONIA; NEW HEBRIDES; RÉUNION; ST. PIERRE AND MIQUELON; SYRIA AND LEBANON; TOGO, FRENCH; and TUNISIA.

Religion and Education. With the exception of

about 1,000,000 Protestants and a few thousand Jews, the French people profess the Roman Catholic faith. At the 1931 census there were 2,286,273 persons of five years or over (7 per cent of the total) unable to read or write. The school enrollment was: Elementary (1937-38), 5,436,554; higher elementary (Nov. 15, 1937), 257,597; secondary (November, 1938), 268,043; universities (July 31, 1938), 74,832.

Agriculture. At the beginning of the European War, about 38 per cent of the working population was directly engaged in agriculture, 31 per cent in industry, and 11.5 per cent in commerce. There were 50,148,088 acres of arable land (36.84 per cent of the total) in 1937. Yields of the chief products in 1938 in metric tons except where otherwise indicated were: Wheat, 7,800,000 (1939), rye, 811,100; barley, 1,290,800; oats, 5,457,400, corn, 578,600; potatoes, 17,314,500; beet sugar, 930,000 (1939); olive oil, 4,800, wine, 61,000,000 hectoliters. Livestock on Jan. 1, 1939, comprised 2,692,000 horses; 135,000 mules; 185,000 asses; 15,622,000 cattle; 9,872,000 sheep and lambs; 7,127,000 pigs; 1,416,000 goats.

Mining and Manufactures. Mineral and metallurgical production (1938) in metric tons was: Coal and lignite, 47,557,000, iron ore, 10,100,000, pyrites, 147,000; potash (K₂O content), 582,000, bauxite, 683,400; pig iron and ferroalloys, 6,049,000; steel ingots and castings, 6,174,000. Silk production (1939) was 41 metric tons; rayon, 25,500 metric tons; alcohol (1937), 109,701,000 gal.; vessels launched, 47,700 gross tons (1938).

Foreign Trade. Merchandise imports in 1938 were valued at 45,981,000,000 francs; exports at 30,586,000,000. For the first eight months of 1939, imports were 32,539,000,000 francs; exports, 23,832,000,000 francs. For distribution of trade in 1937 and 1938, see the 1939 YEAR BOOK. Also see TRADE, FOREIGN, for France's trade with the United States in 1940 and 1941.

Finance. Ordinary (civil) budget estimates for the calendar year 1941 placed receipts at 68,205,014,000 francs and expenditures at 96,959,905,000 francs, against receipts of 79,961,183,000 and expenditures of 79,889,137,000 francs in 1940. The extraordinary 1941 budget provided for expenditures of 37,233,959,000 francs (28,955,966,000 for "liquidating expenses resulting from hostilities" and 8,277,993,000 for public works and unemployment relief), all to be met by public borrowing. In addition, the German army occupation costs for 1941 were estimated at about 183,000,000,000 francs. The anticipated deficit in the ordinary budget in 1941 was 28,754,891,000 francs and the over-all deficit 65,988,850,000 francs. The extraordinary (national defense) budget for 1940 called for expenditures of 249,111,805,000 francs, all to be raised by borrowing.

The French Treasury reported the total public debt on Aug. 31, 1939, at 445,000,000,000 francs; the domestic debt was 432,634,000,000 francs (funded, 352,210,000,000, floating, 80,424,000,000). Currency in circulation totaled 108,532,000,000 francs on Dec. 31, 1938, 149,416,000,000 on Dec. 31, 1939, and 232,000,000,000 on Apr. 30, 1941. The average annual exchange rate of the franc was \$0.0288 in 1938 and \$0.0251 in 1939. Following the armistice of July 26, 1940, the franc was pegged to the reichsmark at the rate of 1 franc = 0.05 reichsmark, or \$0.02 at the German official rate (\$1 = 2.50 reichsmarks). In unoccupied France, the franc was pegged to the U.S. dollar at 43.90 francs to \$1, or 1 franc = \$0.0228.

Transportation. At the outbreak of the European

War, France had about 26,427 miles of railway line, 393,761 miles of roads, 6,016 miles of navigable waterways, and airlines radiating from Paris to virtually all parts of France and the French Empire. The air network was disrupted and part of the railways and highways damaged by the war. On June 30, 1939, the French merchant marine comprised 11,282 vessels of 2,952,975 gross tons; it likewise had severe losses. The chief ports were Marseille, Le Havre, Cherbourg, Dunkirk, Rouen, Boulogne, and Bordeaux. Those along the English Channel and the northwest coast of France suffered heavy war damage during 1940 and 1941.

Government. Following the capitulation of Marshal Henri Philippe Pétain's Government to Germany on June 22, 1940, the French National Assembly met at Vichy, with one-third of its members absent, and on July 10 by a vote of 569 to 80 authorized Marshal Pétain to promulgate a new Constitution subject to ratification by the nation. In five Constitutional Acts promulgated July 11, 12, and 30, Marshal Pétain abolished the democratic, republican Constitution of 1875 and established an authoritarian regime with himself as Chief of State (see YEAR BOOK for 1940, p. 282 f.). The Government consisted of the Chief of State, Cabinet Ministers, and Secretaries of State without Cabinet rank. Ministers and Secretaries of State were appointed and dismissed by the Head of the State. As of Jan. 1, 1941, the Cabinet comprised Marshal Pétain as Chief of State, Gen. Charles Huntziger (Minister of War), Adm. Jean Darlan (Navy), Pierre-Etienne Flandin (Foreign Affairs), Yves Bouthillier (Finance), Marcel B. Peyrouton (Interior), and René Belin (Industrial Production and Labor). The Secretaries of State were Gen. Jean Marie Bergeret (Aviation), Jean Berthelot (Communications), Rear Adm. René Platon (Colonies), Jacques Chevalier (Education and Youth), Pierre Caziot (Agriculture), Jean Achard (Food). See below for developments during 1941.

HISTORY

The year 1941 was one of suspense, suffering, and rising discontent in France. The nation tasted the full bitter dregs of its defeat and humiliation by Germany in 1940. The "honorable peace" for which Marshal Pétain applied on June 16, 1940, was not attained. Nor did France's economic collaboration with the conqueror, agreed to by Pétain after his Montoire interview of Oct. 24, 1940, with Hitler, bring the anticipated results. It led to the rapid extension of German control over French economic life, and in particular over French industrial enterprises. But it failed to induce the Germans to fulfill the terms of the armistice.

Instead Berlin sought alternately to bludgeon and cajole Marshal Pétain's Government at Vichy into military and naval, as well as economic, cooperation against Britain. The Germans offered Vichy an "honorable place" in Hitler's new European order provided full French collaboration was not delayed. They threatened France with the fate of Poland if it did not yield.

To enforce Vichy's compliance, Hitler held nearly two million French soldiers in German prison camps, mostly at forced labor. He declined to end the military occupation, to relax the restrictions on trade and intercourse between occupied and unoccupied France, or to permit the Vichy Government to return to Paris. He refused to reduce the bill for the maintenance of the army of occupation, although the actual daily cost was estimated at 125,000,000 francs instead of the 400,000,000 francs exacted. And he continued the

wholesale requisitionings of foodstuffs and raw materials that threatened France with starvation and economic collapse. Moreover French advocates of "collaboration," particularly the German-controlled press in occupied France, were mobilized by Berlin to force Vichy unreservedly into the Axis camp.

Marshal Pétain strove to resist the German demands as long as possible in the hope that the fluctuating fortunes of the warring powers would either strengthen France's bargaining position or give a clearer indication of the conflict's outcome. To ally France openly with the Axis would jeopardize both the Vichy Government's support at home and the loyalty and security of the French colonial empire. It would deprive France of the much-needed economic and diplomatic support of the United States, and expose French cities to destruction by the Royal Air Force. If the Allies won the war, a France which had so flagrantly betrayed its associates could expect little sympathy at the peace settlement.

Dissension at Vichy. From the beginning of the Pétain regime a faction within the Government led by Vice Premier Pierre Laval urged immediate and full acceptance of the German demands. The combined pressure of Laval and his German backers induced Pétain on Oct. 24, 1940, to accept "in principle" French economic collaboration with the conqueror. Pétain delegated Laval to work out the details of economic collaboration with the Germans. These negotiations were still in progress when Marshal Pétain discovered Laval's conspiracy to oust him and lead France into immediate military as well as economic cooperation with the Reich (see YEAR BOOK for 1940, p. 285-286).

The arrest and dismissal of Laval on Dec. 13, 1940, precipitated an acute crisis within the Vichy Government and in Franco-German relations. The Germans demanded the restoration of Laval to his former Government posts, meanwhile declining to proceed with the negotiations for economic collaboration. Marshal Pétain had entrusted these discussions to his Navy Minister, Admiral Darlan, who saw Hitler in occupied France on Christmas Day, 1940.

Under strong German pressure, which included a vicious anti-Pétain campaign in the Paris press, the Marshal set out to reconstruct his Government on a basis satisfactory to both himself and Berlin. On Jan. 3, 1941, he dropped Minister of State Paul Baudouin. On January 18 he agreed to meet Laval. A communiqué issued after the interview stated that "the misunderstandings that brought about the events of December 13 were dispelled." But Pétain refused to restore Laval to his former dominant position in the Government, and Vichy made it clear on January 20 that the French fleet and the overseas empire would not be placed at Germany's disposal.

British victories over the Italians in Libya during this critical time strengthened Pétain's hand. He also brought his Ministers and other officials under stricter control by a constitutional act of January 27, requiring each of them to take an oath of allegiance to him as Chief of State. At the same time he named a consultative assembly of 188 members as a temporary advisory parliament. On January 29 he appointed a committee of 40 members to unite all political elements (except the Communists) into a single party, to be called the *Rassemblement National*. The Germans countered this move by approving the formation in Paris of a rival organization, the *Rassemblement National Populaire*, headed by Marcel Déat and including other French extremists of both Right and Left

who were committed to full collaboration with the Reich.

Rise of Darlan. On February 8 it was announced in Vichy that Pétain had offered Laval the post of Minister of State—carrying much less power than Laval formerly exercised. When Laval rejected it, Pétain was finally in a position to supplant him with Admiral Darlan, who had made himself acceptable to the Germans. On February 9 Pétain asked for Foreign Minister Flandin's resignation. The same day he appointed Darlan to the additional posts of Vice Premier and Foreign Minister. The next day, by constitutional act, he designated Darlan to succeed him as Chief of State when he (Pétain) retired.

Another Cabinet shake-up occurred February 24-25. Marcel Peyrouton was dropped as Minister of Interior and Marshal Pétain likewise assigned this office to Darlan, who now enjoyed all the powers formerly exercised by Laval. At the same time Yves Bouthillier was named Minister of National Economy and Finance to carry out the program of economic collaboration with Germany. Joseph Barthelemy became Minister of Justice and General Huntziger and Pierre Caziot were retained as Ministers of War and Agriculture respectively. The reduced Cabinet board of five members controlled eight secretaries of state, each directing an administrative department.

Economic Aid to Reich. Darlan now proceeded to carry into effect the program of limited collaboration with Germany agreed to by the Chief of State. Early in March the details of an economic accord were agreed upon under which French industrial establishments and raw material resources in the unoccupied zone were integrated with French and other European territories under direct German control. Germans received the right to purchase shares in all of the most important industrial, commercial, and financial enterprises in France. By utilizing funds exacted from Vichy as "occupational costs," they rapidly extended their control over the French economic system at little cost to themselves. While continuing their requisitioning of French raw materials and food, the Germans supplied other raw materials. French labor and factories converted the raw materials into finished goods, which were marketed by the Germans and the profits shared.

This arrangement, combined with shorter hours of labor, caused a substantial reduction in unemployment. It also placed the French armament industries in both occupied and unoccupied zones at the service of the Axis. It was reported in September that armament factories were working at top speed producing planes, tanks, guns, trucks, grenades, and other implements of war for the Axis armies. Toward the end of the year a growing raw-material shortage caused some curtailment of production, especially in consumer goods.

Military Collaboration. Not content with the results achieved in the economic field, the Germans continued to press Vichy for the cooperation of the French fleet, for the use of ports and air bases in southern France, Syria, and French North and West Africa, and for French aid in sending troops and equipment to the Axis front in Libya. Through the influence of Admiral Darlan, who now openly espoused full collaboration with the Axis, substantial progress was made.

After lengthy negotiations between Darlan and German representatives, it was announced May 7 that Germany had agreed to ease communication between occupied and unoccupied France and reduce occupational costs from 400,000,000 francs

(\$8,000,000) to 300,000,000 francs (\$6,000,000) a day. On May 11 Darlan met Hitler and the German Foreign Minister at Beichtesgaden, Germany. A general program of Franco-German collaboration was agreed upon, which the Cabinet at Vichy approved, according to an announcement of May 14. The following day Marshal Pétain informed the nation by radio that the Darlan-Hitler interview "permits us to light up the road into the future and to continue the conversations that had been begun with the German Government."

"For you, the French people," he continued, "it is simply a question of following me without mental reservation along the path of honor and national interest. If through our close discipline and our public spirit we can conduct the negotiations in progress, France will surmount her defeat and preserve in the world her rank as a European and colonial power."

The actual concessions made by Darlan were not announced. However their substance was revealed by subsequent authenticated reports of German "tourist" infiltration into French North Africa and Syria. The British charged that Axis troops received French aid in reaching Libya through the British blockade. Statements from Vichy also hinted that Darlan had promised not only to defend the French empire against British, Free French, or American attacks, but also to launch a drive to recover the African colonies that went over to Gen. Charles de Gaulle's Free French movement in 1940. With Darlan's consent, the Germans also requisitioned many French ships for use in the Mediterranean and elsewhere as transports and supply vessels.

Roosevelt's Appeal. These developments aroused fear in Britain and the United States that the Vichy Government had decided on full military collaboration with Berlin. On May 15 President Roosevelt appealed to the French people, over the head of Marshal Pétain, to oppose the program of collaboration with the Reich. "It is inconceivable," he said, "that they (the French people) will willingly accept any agreement for so-called 'collaboration' which will in reality imply their alliance with a military power whose central and fundamental policy calls for the utter destruction of liberty, freedom and popular institutions everywhere." Such a program, he added, "would apparently deliver up France and its colonial empire, including French African colonies and the Atlantic coast," thus menacing the peace and safety of the Western Hemisphere.

The same day the United States seized 11 French merchant ships in American ports. When the French Ambassador in Washington protested, Secretary Hull declared that Vichy's cooperation with Germany appeared to have gone beyond the legitimate role of a neutral, independent state. Admiral Darlan replied to these criticisms in a tart radio speech on May 23. He insisted that the Germans had not asked for or obtained anything beyond the terms of the armistice. Yet the aid extended to the Axis by the French High Commissioner in Syria (q.v.) during May and June indicated that Vichy had definitely aligned France with the German cause.

Weygand-Darlan Split. At this point Darlan's program encountered a major obstacle in Gen. Maxime Weygand, who in 1940 had been appointed French proconsul (Delegate General) for the African colonies, with full military and political powers. During conferences with Marshal Pétain in Vichy early in June, Weygand sharply criticized Gen. Henri Dentz's policies in Syria. He apparently objected to

the use of French African bases by Axis forces and refused either to afford military cooperation against the British or to attack the French colonies under Free French control. Darlan, on the other hand, in a radio address on June 10, declared that full collaboration with Germany was the only alternative to national suicide.

A struggle within the Vichy Government to bring Weygand into line with Darlan's collaborationist program ensued, with the United States making every effort to prevent Darlan's triumph. Washington won Britain's reluctant consent to the shipment of oil and food supplies to French North Africa in order to keep Weygand neutral. The British and Free French invasion of Syria and Lebanon on June 8 and the German attack upon Soviet Russia on June 22 were among the developments that gave the victory to Darlan. Both Pétain and Weygand were strongly anti-Communist. Consequently they were disturbed by the Red Army's strong resistance to the German offensive and the renewal of Communist agitation in France. The Vichy Government formally supported Hitler's anti-Communist "crusade." It severed diplomatic relations with the Soviet Union June 30, intensified the anti-Communist drive in France, and authorized the recruitment of French volunteers to serve with the German armies in Russia.

On July 29 Vichy yielded to German pressure and turned over French Indo-China (q.v.) to Japanese "protection." On August 12 Marshal Pétain in a broadcast to the nation declared that France's only hope lay in collaboration with Germany. Deploing the growing domestic criticisms of his Government, he said that he had entrusted greatly increased powers to Admiral Darlan.

Revolt Against Nazis. Further moves toward bringing French Africa into the sphere of Franco-German collaboration appeared imminent when a rising tide of anti-Nazi revolt intervened to prevent action. Hope of a Nazi defeat was reborn in France due to the heavy German losses in Russia, the growing power of Britain, and the prospect of American intervention in the struggle. All elements of the French people opposed to Nazism began to stir. In his radio address of August 12 Marshal Pétain said that "for the last several weeks I have felt an ill wind rising in many regions of France." On August 14 the underground resistance to German rule broke out in open violence when six persons were killed during a riotous demonstration in Paris.

Succeeding weeks saw a steady increase in terrorist bombings, arson, and sabotage, the latter directed particularly against the French railways. After a German officer was stabbed to death in a Paris subway August 21, the occupational authorities announced that "in case of a new criminal act, a number of hostages corresponding to the gravity of the act committed will be shot." The Vichy police and German soldiers joined in arresting and imprisoning thousands of Communists, Jews, and other anti-collaborationist elements.

On August 28 Paul Collette, a young Free French sympathizer who had enlisted in the French Legion for service in Russia, attempted to assassinate both Laval and Marcel Déat, pro-Nazi editor of Paris, while they were reviewing the Legion. Both were seriously wounded but recovered. By the middle of September the spread of sabotage and violence compelled the Germans to admit that other groups besides "Jews and Communists" were involved. They began to arrest Frenchmen of all classes and announced they would be held as hostages for the good behavior of the French people.

Marshal Pétain on September 21 appealed to the nation to end these "criminal attacks" on Germans and pro-German Frenchmen. The Vichy Government established special tribunals in Paris and Lyons to crush sabotage and terrorism. They were authorized to intern, imprison at hard labor, deport, or execute those charged with acts of violence and anti-German agitation. By mid-October these courts had sentenced more than 30,000 "Communists." Between June and October 11, the police searched and questioned 76,500 persons in Paris alone, holding many for trial before the summary courts.

Nevertheless Lieut. Col. Karl Friedrich Holtz, German commander at Nantes, was assassinated in broad daylight on October 20. Gen. Heinrich von Stuepnagel, commander of the German forces in occupied France, had 50 hostages executed October 22 in reprisal. He announced that 50 more would be shot if the assassins were not arrested by midnight of October 23, and offered a 15,000,000-franc reward for information leading to their capture. On October 22 another German officer was shot to death in Bordeaux. The Germans immediately seized 100 hostages in that city, shot 50 of them the following morning, and announced that the remainder would be executed if the assassins were not produced before midnight October 26.

Through the intervention of Marshal Pétain, the execution of the remaining hostages in Nantes and Bordeaux was postponed indefinitely. On November 18 the Paris press announced the arrest of members of a terrorist gang held responsible for both assassinations. Meanwhile the continuance of passive resistance led the Vichy authorities on October 30 to forbid listening to British, American, and other anti-Axis radio broadcasts, even in the privacy of homes. The Government also intensified its efforts to purge the armed forces and the government services of all individuals considered hostile or lukewarm toward the Pétain regime.

Weygand Ousted. The Germans seized upon the lull in France and Nazi victories in Russia to renew pressure upon the Vichy Government for military assistance. Gen. Charles Huntziger, the Minister of War, was killed in an airplane accident November 12 while returning from an inspection of French defenses in Africa. Admiral Darlan assumed the War portfolio temporarily in addition to his other posts. These developments strengthened the faction in the Vichy Government favoring military collaboration with the Reich.

On November 20 General Weygand resigned as Delegate General for French Africa after an interview with Pétain. The office of Delegate General was abolished. The command of the French forces in Africa, previously held by Weygand, was divided between Gen. Alphonse Juin, who was released from a German prison camp earlier in the year, and Gen. Jean Barrau. These officers, assigned to North Africa and West Africa respectively by Admiral Darlan, extended the drive to eliminate anti-German and pro-Allied officers and civil servants from the French army and government services in Africa. Weygand himself, although apparently opposed to collaboration with the Reich, addressed messages to French officials and officers in Africa urging them to stand behind Marshal Pétain as "the safeguard of our future."

Pétain-Goering Interview. Following Weygand's resignation, Admiral Darlan immediately reopened negotiations with the German authorities in France. On November 23 it was once more announced that the occupation tribute levied on France had been reduced by 1,000,000,000 francs daily, retroactive to May 10—the cut announced May 7 had not

been carried into effect. This was followed by a conference between Pétain and Reich Marshal Hermann Goering at Saint-Florentin near Paris on December 1. According to an official spokesman, this conference made possible the expansion of the collaboration principle, but the actual concessions made by Pétain were not made public.

The belief that the Vichy Government had committed itself to some degree of military cooperation with the Axis was reflected by developments following General Weygand's removal. Gen. Robert Odic, former commander of French air forces in North Africa, repudiated the Vichy regime on November 24 and joined the Free French movement. Desertions from the French air forces to the British in Libya were reported shortly afterwards. On November 11 President Roosevelt authorized lend-lease aid to the Free French forces in Africa and Syria. On November 25 the U.S. Government revoked all export licenses for French North Africa. The French public, kept largely in the dark as to the meaning of these developments, began to stir uneasily once more.

At the beginning of December there was a revival of anti-German terrorism. The German authorities and the Vichy Government sought to check it by new large-scale arrests, severe curfew restrictions, and other measures, but without success. On December 10 the Germans again resorted to executions to overawe the populace. Eleven men accused as terrorists, de Gaullist, or spies were shot at Brest. On December 13 General Stuepnagel announced that 100 "Jews, Communists and anarchists who have for certain had relations with authors of these attacks upon our troops" would be immediately executed. At the same time he imposed a billion-franc fine upon Jews in occupied France, and ordered the deportation "to hard labor in the eastern territories" of "a large number of criminal Judeo-Bolsheviki elements."

Vichy Takes Stronger Stand. The Vichy Government the next day took the unexpectedly strong course of announcing that it had protested to the German authorities "regarding such massive repressions." However the attacks upon German soldiers and retaliatory executions of Frenchmen continued. Marshal Pétain, in a Christmas message to some 1,500,000 French prisoners of war still held in Germany, declared that "night is getting darker in the world" and peace was farther off than ever. However he expressed the conviction that "one day the Germans will take into consideration the necessity of repatriating French prisoners" and that he would do everything so that that day might soon come.

The German reverses in Russia and the entrance of the United States into the war in December made the Germans more insistent in their negotiations with Vichy, but strengthened Pétain's bargaining powers. The Vichy regime proclaimed France's neutrality in the conflict between the Axis powers and the United States. On December 12 the U.S. Government seized 14 French merchant vessels in American ports, including the 83,423-ton liner *Normandie*, which was converted for war purposes. There was danger that the United States would seize France's West Indian colonies. However, on December 18 it was announced that Rear Admiral Robert, French High Commissioner in Martinique, and Rear Admiral Horne of the U.S. Navy had signed an agreement for the maintenance of the status quo of French possessions and naval vessels in the West Indies. The Vichy Government denied knowledge of this accord, which incensed the Germans.

Other Internal Developments. During 1941 the Pétain

Government made only minor progress toward the permanent formulation and consolidation of the totalitarian regime introduced in 1940 (see *YEAR BOOK* for 1940, p. 282 f.). The committee named by the Marshal to draw up a new constitution produced no formal recommendations, but it was reported October 17 that the committee had rejected proposals for a monarchy or dictatorship in favor of continuance of the republic.

Marshal Pétain outlined his constitutional and political aims in his important speech of August 12. He promised to correct the abuses of economic power by the trusts and corporations established in 1940, and to protect consumers against the profiteering of government agents in charge of food distribution. Additional powers were given to the National Food Supply Bureau and the Ministry of Supplies was reorganized. He announced the establishment of commissioners to study means of strengthening the central government. The prefects received increased authority. The Legion of War Veterans was declared to be the true representative of the National Revolution in unoccupied France, while all other political parties were ordered to suspend all activities, meetings, and publications immediately. At the same time, the Marshal announced that payment of salaries of members of the dissolved Parliament would cease on September 30.

This speech was followed late in August by a rump session of 100 members of Parliament, who organized in opposition to the Vichy Government. Immediately afterwards the permanent officers of Parliament were instructed to move their headquarters from Vichy to the small town of Chatel Guyon. On November 19 a decree designated the Legion of Veterans as "the only organization for civic action open to citizens desirous of associating themselves with war veterans in order to serve the principles of National Revolution and of ensuring their application in all fields."

A labor code issued October 27 barred strikes and lockouts, stipulated that wages be paid according to the "social stage" of the work performed, and provided for arbitration of all labor disputes within the framework of government-supervised professional organizations. Labor unions were barred from all political or religious activity. Committees with equal employer, laborer, and employee representation, and including a government commissioner, were authorized to fix wages, hours, working conditions and control health and social security measures.

Reversing a primary tenet of the Third Republic, a decree of November 9 provided for state financial support of church schools of the primary grade of all denominations. Other decrees promulgated during the year provided for optional religious instruction in the national schools and for the restoration to religious associations of church lands and properties confiscated by the state early in the century. Contrary to expectations, however, the secular educational system of the republic was maintained. New restrictions were imposed upon the Jews in line with the Government's proclaimed aim of "eliminating all Jewish influence in the national economy." The drive to purge Government services of Freemasons likewise continued.

Former Premiers Edouard Daladier, Paul Reynaud, and Leon Blum, General Marie Gustave Gamelin, and Georges Mandel, who were arrested by the Vichy Government in 1940 and charged with responsibility for France's entrance into war and defeat (see *YEAR BOOK* for 1940, p. 284), were held in custody throughout 1941 without trial. To

handle this ticklish question, Marshal Pétain on August 12 appointed a Council of Political Justice to devise the best methods of bringing the accused to justice. The Council on October 14 submitted its recommendations. Shortly afterwards Pétain transferred the five defendants to Fort Pourtalet in the Pyrenees and fixed the date of their trial before the Supreme Court at Riom for Jan. 15, 1942. Former Air Minister Guy La Chambre, who returned from the United States to face trial, and Pierre Jacomet, former Secretary-General of the War Ministry, remained interned in Bourassol Manor.

The military tribunal at Clermont-Ferrand continued to pass sentences, many of them in absentia, upon members of the armed forces at home and abroad who opposed the Pétain Government's capitulation to Germany or who were charged with contributing to the French military collapse. The military summary court established at Gannat near Vichy to judge cases of de Gaulist agitators and army and navy deserters was suppressed early in November after passing numerous death sentences by default upon Frenchmen who had escaped to join the Free French forces. Further modification of the judicial system was announced November 22. Trial by jury was restricted, and civil authorities (Ministers and prefects) were empowered to order internment or impounding without other legal process.

Against the defiant but mostly passive resistance of the inhabitants, the Germans continued the process of uprooting Frenchmen from Alsace and Lorraine and sending them into the unoccupied zone. Forty delegates representing the refugees met in Clermont-Ferrand in June and organized, primarily for the undeclared objective of restoring French sovereignty in the two annexed provinces.

Food Situation. Due to German requisitioning, the dislocation of transportation facilities, and the British blockade, there was an acute food shortage in some cities and districts of France during the winter of 1940-41. On March 10 Admiral Darlan threatened to use the French navy to convoy food ships to France unless the British relaxed their blockade. At the same time Marshal Pétain appealed for American aid. As a result of pressure from Washington, the British granted navicerts for several shiploads of American flour and milk to unoccupied France. The American Red Cross and the Quakers continued to distribute small quantities of food in the unoccupied zone, but the Red Cross refused to extend its work into the occupied zone because the German authorities declined to allow it the required freedom in supervising distribution of food.

Norman H. Davis, chairman of the American Red Cross, reported to the U.S. House Appropriations Committee late in the year that reports of widespread starvation and deep suffering in occupied France were "exaggerated." However the food rations for both sections of France were reduced during the autumn and all indications pointed to a difficult winter. Public health records showed a rise in malnutrition and child mortality and a decline in the average weight of adults. The Vichy Government's efforts to control the distribution and price of every item of food led to widespread evasions, to hundred of arrests, and to bureaucratic hampering of the distribution system. Fairly large supplies of foodstuffs were received steadily from French North Africa, but a considerable proportion was reported to have been delivered to Germany and Italy.

Free French Movement. The Free French Movement

established by Gen. Charles de Gaulle in 1940 in opposition to the Pétain Government's capitulation policy, gained strength and influence during 1941. Free French forces under the command of Gen. Georges Catroux joined with the British in the conquest of Syria and Lebanon, which then became an important bastion of Free French power (see SYRIA AND LEBANON). The British Government on August 7 formally recognized French preeminence in the Levant States.

The Vichy Government's tacit alliance with the Reich and its submission to Japan in French Indo-China, coupled with the growing strength of the Allies, caused further defections from Vichy forces to the Free French. General de Gaulle answered criticisms of his one-man leadership on September 24 by forming a Free French National Committee of eight National Commissioners and two Directors, with himself as President. The decree vested legislative powers in General de Gaulle, acting in consultation with the National Committee, or Free French Cabinet. The National Commissioners, with their respective departments, were: Economy, Finance and Colonies, Coordinator of the civil commissariats, René Pleven, Foreign Affairs, Maurice Dejean; War, Gen. LeGentilhomme, Navy and Merchant Marine, Admiral Muselier; Justice and Education, René Cassin; Aviation, Colonel Valin; Labor and Information, André Diethelm; National Commissioner without department, Georges Thierry d'Argenlieu. The two Directors were Hervé Alphan, Economic Affairs, and Henry Hauck, Labor.

The Council for the Defense of the French Empire, established in 1940, continued to function as an advisory body on defense and war activities. A Military High Committee was established later to give advice concerning the general conduct of the war and coordination of land, sea, and air forces. The Free French National Committee was recognized as representing all Free French territories and as the organ qualified to deal with all questions concerning collaboration with the Allied powers by Great Britain, Russia, Belgium, Czechoslovakia, and Poland.

Neither the United States nor the Allied governments granted the Free French request for recognition as the legal government of France. The Free French representatives joined with the other Allied Governments in the mutual accords concluded during 1941 in London (see GREAT BRITAIN under *History*). Immediately after the Japanese attack upon the United States and Great Britain on December 7, General de Gaulle declared Free France and all its territories in the Pacific at war with Japan.

St. Pierre-Miquelon Coup. Some friction between the Free French leaders and the Washington Government developed when a Free French naval force landed unexpectedly on the islands of St. Pierre and Miquelon (q.v.) on December 24 and seized control with the support of the great majority of the population. The next day the U.S. State Department condemned the action strongly as "contrary to the agreement of all parties concerned and certainly without the prior knowledge or consent in any sense of the United States Government." It inquired of the Canadian Government what steps it was prepared to take to restore the status quo of the islands. At the end of the year negotiations to settle diplomatic issues arising from the occupation were under way in Washington. Meanwhile the Free French authorities remained in control.

Darlan-Ciano Meetings. Admiral Darlan arrived in Turin, Italy, on December 9 for a conference with the Italian Foreign Minister, Count Ciano, on

Franco-Italian problems. Soon thereafter Italy released its French prisoners of war, comprising 1 officer and 136 men. Later it was revealed that a Franco-Italian protocol relating to the armistice convention and other accords were signed November 22. Under these accords, France was reported to have extended Italy a credit of 23 billion francs. Italy agreed not to demand delivery of all French weapons and equipment used against Italian forces, as called for by Article X of the Franco-Italian armistice, and to permit French citizens to obtain the income from their properties in Italy.

See BELGIUM, GERMANY, GREAT BRITAIN, ITALY, JAPAN, SPAIN, SYRIA, and YUGOSLAVIA, under *History*, BIRTH CONTROL; DAIRYING; FASCISM; FRENCH LITERATURE; LABOR CONDITIONS under *Employment*, etc.; LEND-LEASE ADMINISTRATION; MUSIC; NAVAL PROGRESS; NEWSPAPERS AND MAGAZINES; REFUGEES; SOCIALISM; THEATER; WORLD WAR.

FRANKLIN INSTITUTE. The Franklin Institute of the State of Pennsylvania for the Promotion of the Mechanic Arts, founded in 1824, is devoted to the increase of useful knowledge, to the encouragement of invention and discovery, and to the education of the public in the achievements of science and industry. Its very title has always indicated a desire to do honor to Benjamin Franklin.

The Committee on Science and Arts, formed of 66 members of the Institute, reviews in great detail many of the advances of science and technology. It recommends to the Board of Managers those persons deserving the annual awards of the Institute, which are formally presented at Medal Day Exercises in May. A Franklin Medal, highest award of the Institute, was presented in 1941 to Sir Chandrasekhara Venkata Raman, F.R.S., LL.D., D.Sc., Director, Indian Institute of Science, Bangalore, Mysore, India "in recognition of his many brilliant contributions to physical science," and to Dr. Edwin Howard Armstrong, Professor of Electrical Engineering, Columbia University "in recognition of his pioneer work in regeneration and the oscillating vacuum tube circuits."

The Franklin Institute includes in its activity publication of *The Journal of the Franklin Institute*, established in January, 1826, lectures presented about 20 times a year by distinguished persons in science and industry, and traveling shows which extend its educational influence beyond its walls. From the laboratories of the Bartol Research Foundation and the Biochemical Research Foundation, additions are constantly being made to scientific knowledge. The Institute also operates a seismograph and promotes scientific expeditions. The seismograph and observatory, with Franklin Hall and the Fels Planetarium, together with its 4,000 active exhibits constitute the Institute's museum. The library now numbers 123,000 volumes and 40,000 pamphlets, devoted entirely to works on applied science and technology, and is particularly noted for the collection of patent literature.

The President in 1941 was Philip C. Staples; Secretary and Director, Henry Butler Allen. The Institute is located in a new building on Benjamin Franklin Parkway, Philadelphia, Pa.

FREEMASONRY. In the United States, including the Philippine Islands, there were in January, 1942, 2,467,185 Masons, organized in 50 independent Grand Lodges composed of 5,547 Lodges. Although this was a slight decrease from last year's figures, many Grand Lodges showed an increase, and it was evident that the period of numerical decline ushered in by the economic depression of

the 1930's was drawing to a close. Recent statistics from the British Empire are not available, but the past few years' steady growth was maintained through the first months of the war.

As a society devoted primarily to individual character building, Masonry's work in the present world crisis is chiefly personal, fraternal, and charitable. All Grand Lodges have taken steps to see that Masons in the armed forces receive special attention from Lodges. Many Grand Lodges are supporting the efforts of the Masonic Service Association of the United States in its efforts to establish Masonic recreational centers near training camps. All Masonic organizations are making determined drives to swell the coffers of established welfare agencies such as the Red Cross and the U.S.O. Many are investing heavily in Defense Bonds, the Grand Lodges of Tennessee and Washington, and Scottish Rite organizations in Seattle, San Francisco, and Washington, D.C., having each made initial subscriptions of \$50,000. Substantial contributions have gone to charitable work of the Grand Lodge of England. The Scottish Rite Masons of Boise, Idaho, sent an ambulance to China. The Southern Jurisdiction as a whole sent ten, and also contributed more than \$69,000 to distressed Masons abroad. The Shriners continued their support of 15 hospitals for crippled children, costing \$1,000,000 a year; bequests of over \$100,000 were received in October. Patriotism and self sacrifice have always been taught by the Fraternity, and are particularly stressed now. In a letter to all New York members dated December 17, Grand Master Henry C. Turner, directed attention to seven of the many specific activities in which civilians can and must serve their country in this emergency.

Freemasonry carried on in Great Britain, with heavy duties assumed by the older members who must take the places of thousands away on military service. Meetings have been regular, but in many cases they have been held during daylight hours instead of in the evening. The modern concrete Freemason's Hall in London is open 24 hours a day for shelter of members and non-members alike. Bombings destroyed some meeting places, and in April a Lodge gathering in Scotland was bombed and 27 members were killed and 36 wounded. *The Freemason*, 71-year-old weekly journal, was bombed out, and suspended publication after Sept. 7, 1940. In addition to the regular peace-time charities, the Royal Masonic Hospital has been greatly expanded, equipped, and opened for war wounded. All over England, members turned in their gold jewels to be melted, \$120,000 having been realized. New South Wales Masons contribute regular sums weekly to the Grand Master's War Benevolent Fund. In September, Ontario Masons, in addition to \$110,000 already sent to British war welfare, planned to add \$10,000 each month.

As late as April 18, Scottish Rite Masons were meeting in Peking, China. The last Grand Master of Norway, Hans Johndal Roenneberg, 74, died September 9. In September the Vichy government suspended five army generals and a State Councilman on the sole ground of their Masonic membership. Bernard Fay, librarian of the National Library, is preparing a museum devoted to banned secret societies. A Paris exhibition of seized Masonic regalia and documents was opened in October, 1940. Until very recently, a few English and Scottish Lodges were quietly tolerated in Japan, on condition that no Japanese national ever be permitted to join.

Conventions, etc. *January 28*, Grand Lodge of the Philippines; John Robert McFie, Jr., was elected

Grand Master; Antonio Gonzalez was reelected Grand Secretary. *February 22-23*, George Washington Masonic National Memorial Association, Alexandria, Va.: \$65,701.99 was received, bringing total contributions for building and maintaining the monument to more than \$4,250,000. Grand Lodge Secretaries' Conference, Washington, D.C.: The Chairman was C. C. Hunt of Iowa, and there was discussion of investigation of candidates and cooperation among organizations. Grand Masters' Conference, Washington, D.C.: the agenda included social security taxes, the national preparedness program, and Masonry in Europe and Mexico. Masonic Service Association of the U.S. Washington, D.C.: Carl H. Claudy, Executive Secretary, reported progress in Masonic welfare work for the armed forces. *March 23*, Grand Lodge of Cuba: Garcia Pedroso was reelected Grand Master. *April 13*, 25,000 attended Easter Sunrise Service of the Grand Encampment of Knights Templar of the U.S. in Arlington, Va. *May 6-8*, Grand Lodge of New York, 160th Annual; Henry C. Turner was reelected Grand Master; Charles H. Johnson was reelected Grand Secretary; the Rt. Rev. Henry St. George Tucker, Presiding Bishop of the Protestant Episcopal Church and former missionary to Japan, was given the Grand Lodge Award for Distinguished Achievement. *June 12*, Grand Lodge of Iowa, 100th Anniversary. *June 22-24*, Grand Lodge of Rhode Island, 150th Anniversary. *June 23-26*, Supreme Council of the Grotto, at St. Louis. *August 28-30*, National Federated Craft, 12th annual, at Nashville, Tenn. *September 21-25*, Northern Supreme Council, Scottish Rite Masons, at Chicago: Grand Com. Melvin M. Johnson, of Boston, presided. *October 7, 8*, Supreme Council of Canada, Scottish Rite Masons, at Regina, Saskatchewan. *October 28*, Virginia Grand Chapter of Royal Arch Masons, 100th Anniversary. *November 6, 7*, Masonic Relief Association of the United States and Canada, at Chicago: President Charles H. Johnson, Grand Secretary of the Grand Lodge of New York, presided, and the program included discussions of Uniform Dues Cards, Uniform Procedure of Interjurisdictional Relief, and Masonic Charity Trends.

See BELGIUM and NETHERLANDS under *History*.

FRENCH CAMEROUN. See CAMEROUN, FRENCH.

FRENCH CONGO. See FRENCH EQUATORIAL AFRICA.

FRENCH EQUATORIAL AFRICA. A French colonial territory consisting of the four colonies: Chad (461,202 sq. mi.; capital, Fort Lamy), Gabon (93,218 sq. mi.; capital, Libreville), Middle Congo (166,069 sq. mi.; capital, Brazzaville), and Ubangi-Shari (238,767 sq. mi.; capital, Bangui). Total area, 959,256 square miles; total population (Jan. 1, 1938 estimate), 3,500,000. Capital, Brazzaville.

Production and Trade. The chief agricultural products are palm kernels, palm oil, coffee, cacao, cotton, and wild rubber. Tropical forests of 300,000 miles in area contain trees of industrial value. Ivory is an important item of export. The minerals found include copper, zinc, lead, gold, and diamonds. A railway, 318 miles in length, connects Pointe-Noire with Brazzaville. Trade, values in old U.S. gold dollars (1938): \$5,000,000 for imports and \$4,500,000 for exports. Roads (1940): 14,713 miles.

Government. Budget (1938): 224,629,000 francs (revenue and expenditure balanced). The franc averaged \$0.0288 for 1938; \$0.0251, 1939. French Equatorial Africa is a single administrative unit under the rule of a governor general, aided by an administrative council. During 1940 the various

colonies of the territory seceded from the Vichy government and joined the "Free French" forces of Gen. Charles de Gaulle (see *YEAR BOOK* for 1940; p. 290). Governor General, M. Eboué (appointed early in 1941); High Commissioner, General de Larminat (appointed Aug. 30, 1940).

History. French Equatorial Africa continued during 1941 under the control of Gen. de Gaulle's Council for the Defense of the Empire, set up on Oct. 27, 1940, and recognized by Great Britain as the *de facto* government of all "Free French" territories. It was announced during June of 1941 that an economic agreement (retroactive from Oct. 1, 1940, to Sept. 30, 1941) had been concluded between Great Britain and French Equatorial Africa under which the British government agreed to guarantee the sale of 20,000 tons of the commercial cotton, and to purchase a considerable portion of the coffee crop, a large quantity of timber, and the total output of palm oil, palm kernels, groundnuts, and beniseed. In addition, the British government agreed to make all purchases in pounds sterling, converted at the official rate of 176.625 francs to the pound, and to facilitate so far as possible supplies of essential imports from the sterling area.

Brazzaville, the capital, and the surrounding country was an important center of "Free French" activity and is a base for the army of Gen. Charles de Gaulle operating against the forces of the Axis Powers in the Sahara Desert and East Africa. A United States Mission, made up of Col. H. F. Cunningham of the U.S. Army, Lieut. Comdr. John Mitchell of the U.S. Naval Air Corps, and Lawrence Taylor of the U.S. State Department, arrived in French Equatorial Africa during October to study the vast territory in order to find out how best to help "Free France." During October, a newly formed company—Air France Libre—was operating an air service between Brazzaville and Damascus, Syria.

See FRANCE under *History*.

FRENCH GUIANA. A French colony in South America. Area, 7,722 square miles; population (1936 census), 30,906. The penal settlement had a population of 5,628 men. Capital, Cayenne, 11,704 inhabitants. Rice, maize, manioc, cacao, coffee, bananas, and sugar cane are the chief agricultural crops. There are large forests rich in various kinds of timber. Gold mining is the most important industry. Trade (1939): 61,584,278 francs for imports; 47,490,741 francs for exports (franc averaged \$0.0251 for 1939). The budget for 1937 balanced at 17,704,755 francs. A governor heads the administration.

Inini. This territory comprises the hinterland separated from French Guiana by the Decree of July 6, 1930. Area, 27,027 square miles; population (1936), 6,099. The main center is Maroni. Rosewood and other cabinet woods are the chief products. Figures of commerce are included in those of French Guiana. The budget for 1937 balanced at 3,329,542 francs. Inini is under the direct administration of the governor of French Guiana, assisted by an administrative council.

See MARTINIQUE under *History*.

FRENCH GUINEA. See FRENCH WEST AFRICA.

FRENCH INDIA. The five French colonies in India—Chandernagor, Karikal, Mahé, Pondichéry, and Yanam. Area, 196 square miles. Population (1939), 304,680. Capital, Pondichéry (51,992 inhabitants). Rice, manioc, and groundnuts are the main products. Trade (1939, at ports of Pondichéry and

Karikal); 80,467,000 francs for imports and 82,075,000 francs for exports (franc averaged \$0.0251 in 1939). All the colonies adhered to the "Free French" movement headed by Gen. Charles de Gaulle following the French capitulation to Germany and Italy in June, 1940.

FRENCH INDO-CHINA. A French dependency in southeastern Asia comprising the divisions shown in the accompanying table.

Division	Sq. mi.	Pop. (1936)	Capital
Annam ^a	57,143	5,656,000	Huế
Cambodia ^a	69,884	3,046,000	Pnom-Penh
Cochin China ^b	25,096	4,616,000	Saigon
Kwangchowan ^c	309	230,000	Fort Bayard
Laos ^c	89,189	1,012,000	Vientiane
Tonkin (Tongking) ^d	44,787	8,700,000	Hanoi
French Indo-China ^e	286,408	23,260,000	Hanoi ^f

^a Protectorate. ^b Colony. ^c Also known as Kwangchow. Leased from China for 99 years in 1898 (territory increased in 1899) and placed under the authority of the Governor-General of French Indo-China. ^d The capital city is Hanoi, but during certain seasons of the year, when climatic conditions are oppressive, the government offices move to Saigon. ^e Under the terms of a peace treaty, concluded on May 9, 1941, France ceded to Thailand the districts of Paklay and Bassac and the larger part of Cambodia. See below under *History*.

Chief towns: Hanoi, the capital, 145,491 inhabitants; Binh-Dinh, 147,199; Cholon, 145,254; Haiphong, 122,000; Saigon, 111,000; Pnom-Penh, 102,678; Tchékam, 35,000; Huế, 33,222; Vientiane, 28,000; Battambang, 22,000; Fort Bayard, 12,000.

Education (1939): For French children there were 42 primary and secondary schools (8,226 pupils enrolled). For native children there were 7,226 schools of all kinds (527,820 pupils enrolled). In addition, there were many private schools for foreign elements of the population. The University of Hanoi had 623 students.

Production and Trade. Rice is the most important agricultural crop, the area under cultivation during 1940-41 being 5,478,000 acres from which 3,000,291 metric tons were produced. The estimated production of rubber for 1941 was 76,000 metric tons (70,000 for 1940). Other agricultural products were maize, pepper, spices, tea, kapok, groundnuts, and copra. Minerals (1940 export figures in metric tons): iron (41,700), tin (2,776), wolframite (454), manganese (500), antimony, lead, and salt. The output of anthracite coal in 1939 totaled 2,615,000 metric tons. Gold produced in 1939 amounted to 8,037 troy oz. Trade (1939): imports, 2,382,262,000 francs (cotton and silk tissues, metal goods, kerosene, and motor vehicles were the main items); exports, 3,494,724,000 francs (rice 1,386 million francs, rubber 916 million francs). The franc averaged \$0.0251 for 1939; the French Indo-China piaster was equal to 10 French francs.

Communications. In 1940 there were 22,658 miles of roads, 2,093 miles of railways, 9,687 miles of telegraph lines, 8,932 miles of telephone lines, and a radio-telephone service from Saigon to Europe.

Finance. The general budget for 1941 was balanced at 1,290,147,500 francs and the extraordinary budget at 189,337,800 francs. For 1940 the general budget balanced at 1,346,788,700 francs and the supplementary railway budget at 153,210,000 francs. The public debt on Dec. 31, 1940, was 2,515,894,110 francs.

Government. The government for the whole of French Indo-China is administered by a governor assisted by a secretary-general, a government council, and a grand council for economic affairs. Cochin China, which is a direct French colony, is headed by a governor aided by a colonial council.

Each of the four protectorates (Annam, Cambodia, Laos, and Tonkin) is headed by a resident-superior assisted by a protectorate council and a council of economic affairs. Governor General, Adm. Jean Decoux.

HISTORY

The foothold gained in Northern French Indo-China by the Japanese in 1940 (see YEAR BOOK for 1940, p. 291) was followed by Japanese military occupation of the entire colony in 1941. The seizure took place without violence or opposition as a result of skillful Japanese diplomacy in playing off Thailand against the French colony and in utilizing Tokyo's influence in Berlin to extort concessions from the Vichy Government in France.

War with Thailand. The sporadic border clashes with Thai troops resulting from Thailand's territorial demands on French Indo-China developed into a full-fledged Thai invasion early in January, 1941. It was reliably reported that Japanese military advisers, as well as planes and pilots, aided the Thai drive. At the same time Japan increased its pressure upon the French authorities in Indo-China to make further political and economic concessions. This squeeze play enabled the Japanese to strengthen their hold on the French colony without provoking outside intervention.

With the Thai invasion making steady headway, the Japanese Government on January 21 offered to "mediate" the dispute. Governor Decoux accepted the same day and the Vichy Government, under pressure from Berlin, consented on January 22. Meeting on board a Japanese cruiser in Saigon harbor, the French and Thai representatives on January 31 signed an armistice drafted by the Japanese mediators.

The armistice provided for a 10-day suspension of hostilities pending the conclusion of a peace treaty between France and Thailand in Tokyo. The French, however, resisted the Japanese demand for the cession to Thailand of about one-third of the western Indo-China provinces of Laos and Cambodia. After the official Japanese spokesman at Tokyo warned France to accept the Japanese proposals or "face the consequences of Japan's determination to assert leadership in Greater East Asia," a compromise peace settlement was finally agreed upon on March 11.

Under it Thailand acquired an estimated 21,750 square miles of territory in Laos and Cambodia—considerably less than the original Japanese proposal. Thailand undertook to pay France 6,000,000 piastres as compensation. The ceded territories were demilitarized, according to the accord, and Indo-China's nationals in that area were guaranteed equality of treatment with Thai nationals. As part of the settlement, an exchange of letters made Japan the guarantor of the execution of the peace terms and bound both French Indo-China and Thailand not to conclude any political, economic, or military agreement with third powers directed against Japan. The treaty incorporating these provisions was signed in Tokyo on May 9.

Economic Concessions. On May 6 Japan reaped further gains from its interventionist program in Indo-China through the conclusion at Tokyo of two economic accords with the French authorities, giving the Japanese an economic stranglehold on the colony. The accords consisted of a general treaty of commerce and navigation, and a five-year trade agreement. The latter reduced or eliminated Indo-China's tariffs on Japanese products and gave Japan a virtual monopoly of Indo-China's exports, particularly rice, corn, rubber, and minerals. These ac-

cords were the outcome of negotiations for economic collaboration initiated in 1940 (see YEAR BOOK for 1940, p. 291).

Japan Takes Military Control. Once in economic control, the Japanese proceeded by indirection to fasten their military domination upon the colony. The airdrome at Saigon had been partially taken over without French sanction early in 1941. There was a gradual infiltration of Japanese military units into the southern part of Indo-China, while Japanese warships frequented the coastal waters and harbors. Japanese correspondents reported a growth of de Gaulist sentiment and activity among the French and native inhabitants of the colony and the Tokyo press, attributing this alleged trend to British intrigue, threatened forceful counter measures. At the same time the Japanese adopted a menacing attitude toward all foreigners in Indo-China. On May 25 they seized more than \$10,000,000 worth of gasoline, iron, and other war stores belonging to two American companies from warehouses in Haiphong. These supplies, purchased with United States Government credits and consigned to the Chinese Government, had been held at Haiphong since the Japanese invasion of northern Indo-China in 1940.

Early in July the Tokyo press began a new campaign against the French authorities in Indo-China, charging evasion of the economic accords of May 6 and persecution of pro-Japanese Annamese. Demands for Japanese military control were served on the Vichy Government, again with support from Berlin. On July 23 Vichy officials announced that the Government had "in principle" accepted Japanese "cooperation" for the defense of French Indo-China against British threats. Japanese warships and troop transports appeared off the southern coast of Indo-China the next day and began the occupation of Saigon July 26.

Three days later the Vichy Government signed a protocol formalizing the Japanese occupation. It provided for joint Franco-Japanese military cooperation for the defense of the colony. In the protocol Japan undertook "to respect the rights and interests of France in East Asia, in particular, the territorial integrity of French Indo-China, and the sovereign rights of France in all parts of the Union of Indo-China." It was stipulated that special defense arrangements under the protocol were to continue in effect "only so long as the circumstances motivating their adoption continue to exist."

An accompanying special military accord authorized Japanese occupation of the Saigon airfield, the partially completed naval base at Cam Ranh Bay, and key points and airdromes along the Thai and Chinese frontiers and the southern coast. In addition to the Japanese forces authorized in northern Indo-China under the accord of Sept. 22, 1940, the Japanese were permitted under the new arrangement to station 40,000 troops at eight air bases and five garrison points in southern French Indo-China.

The Japanese proceeded to fortify and strengthen their newly won positions in preparation for the next expansionist move. Strong forces were concentrated along the border of Thailand to reinforce Japanese diplomatic pressure upon Bangkok (see THAILAND under *History*). The French armed forces were dissolved and their arms seized by the invaders. The authority of the French Government was steadily whittled down while Japanese economic control was extended. Under Japanese pressure the Indo-China Government on August 13 prohibited the export of all merchandise except that going to Japan. A former Japanese Foreign Minister, Kenkichi Yoshizawa, was sent to Saigon as spe-

cial ambassador-at-large to unify all Japanese political, economic, and cultural organs in Indo-China.

Early in October all warehouses, office buildings and stores in the vicinity of the Saigon docks were requisitioned by the Japanese authorities to store equipment. At the same time Japan made new demands on the Indo-China Government, including control of the postal censorship and a large increase in the number of troops permitted under the July 26 agreement. On October 19 a Japanese economic mission of 31 members arrived in Hanoi to speed the economic exploitation of the colony. The American consulate at Saigon was wrecked by a bomb explosion on November 23. Late in November, large-scale Japanese troop movements to Indo-China began behind a screen of denials from Tokyo and Vichy. On December 7 the Japanese naval, air, and land forces stationed there began a simultaneous surprise attack upon Thailand, the Philippines, and the British, Dutch, and United States possessions in the Pacific and southeastern Asia. A new accord granting Japan further rights in Indo-China was announced by the Vichy Government December 10.

French Rule Modified. The Vichy Government announced Jan. 3, 1941, that French authorities in Indo-China had been granted large powers of autonomy in handling colonial affairs. Governor General Decoux used this authority to substitute a highly centralized, dictatorial rule on the Vichy model for the former administrative system. He announced November 16 that he had dismissed 300 officials who opposed the "new order," assumed the right to appoint municipal officials formerly chosen by townships, and imprisoned those who "disturbed my efforts to bring the Indo-China administration into line with political developments in France." This policy, combined with the growing subservience of the Indo-China Government to Japan, was reported to have caused widespread unrest and opposition among both French and native inhabitants of the colony.

King Sisowath Monivong of Cambodia Province died April 23 and was succeeded by his nephew, Prince Sianouk, upon nomination of the Royal Grand Council.

See JAPAN under *History*, WORLD WAR.

FRENCH IVORY COAST. See FRENCH WEST AFRICA.

FRENCH LITERATURE. There has been a surprising amount of publications in French—even in the field of literature. What must be emphasized at the outset is that tremendous efforts were made from all sides to keep the torch burning. No doubt, all is not of first quality, but for reasons easy to understand. Moreover only what we may call "innocent" literature was allowed to appear in a land crushed under the heel of a more than severe conqueror. A close checking was maintained so that no publication unfavorable to the enemy might be issued, and actual steps were taken to substitute a Nazi-inspired literature to the French. In the first place a number of books were retired from book shops, as listed in an *Index Librorum Germanicus*; then a "Comité du livre français" was formed under German control for books to be printed with such French names of "collaborationists" as Bernard Fay (who already had consented—it seems without reluctance at all—to take over from the then incumbent the supervision of the Bibliothèque Nationale), A. Bellessort, the "Secrétaire perpétuel" of the French Academy, the fanatic pro-German Drieu de la Rochelle, Alfred Siegfried, Paul Morand, some perhaps having accepted reluctantly.

The Rector of the University of Paris, Paul Roussy, was displaced as hostile to Nazism; a request was sent to members of the French Academy to return to Paris and give an appearance of normal life to the capital, with the regular Thursday afternoon meetings attended; the same was done for the Professors of the Collège de France some of whom had retired to Lyons, in the unoccupied zone, and had lectured there.

The task of keeping open at least some of the theaters seemed easier: Copeau, Jouvet, Dullin, Baty, Guitry, and several others returned soon enough to resume a "season." All told it appears that the people of France resisted the invader with more determination than the so-called *Intelligentsia*. Among the publishing firms that agreed to reopen under strict supervision of the Germans, one may name especially Grasset, a very strong believer in "collaboration," who even wrote a book himself, *A la recherche de la France*. Not much less friendly to the "collaboration" was Plon; others, under less conviction possibly, were Gallimard, Michel, Boivin, Corréa, Flammarion, Mercure. Various shades of "collaboration" were evident also in the pages of reviews and newspapers, although all had, of course, to show "patte blanche." The old *Revue des Deux Mondes*, under the direction of Chaumeix of the French Academy, was quite alive, but seemed chiefly anxious to exalt the Vichy government; among contributors one finds Bellessort, Maurras, Bordeaux, Duhamel, Billy, Hazard, Madelin. *L'Illustration* is as nearly normal as possible. The frantically "collaborating" weekly is *Candide*, directed by Massis. Hardly less pro-Nazi is the new *La Gerbe*, founded by A. de Chateaubriant. *Le Temps*, daily, keeps its traditional part as echo of the government of the hour, André Thérive remains literary critic. The *Matin* edited by J. Luchaire, who also founded *Les Temps nouveaux*, is unblushingly pro-Nazi; but the palm for "collaboration" belongs to *L'Oeuvre*, edited by Marcel Déat. Several of the best known French writers, however, refused money to contribute to Nazi-minded publications and had to suffer for it; one cites Valéry, Bouteron, Roger Martin du Gard, Paul Fort; also Germaine Beaumont and Simone Ratel.

Various attempts were made in the unoccupied zone to encourage writing; in Toulouse, a sort of revival of the old *jeux floraux* was arranged. Then, in Avignon, the Félibrist poet Aubanel started a collection of books signed by illustrious authors, to the contents of which no one could object on political grounds—books on history, travel, etc. French Switzerland was the only country able to come to the rescue to a certain extent. (See also SWISS LITERATURE.) A publishing firm in Neuchâtel issued a commemorative volume to honor the lamented philosopher Bergson, the text being furnished by French authors. At Fribourg, was published a timely novel by Ed. Jaloux, *Le vent souffle sur la flamme*; and in Geneva, Jacques de Lacretelle gave out his *L'heure qui change*. In Lausanne a series of books by favorite French authors, and which were no longer obtainable in former editions was launched (by Colette, Renard, Fournier, Péguy, etc.), and a French Swiss "Gilde littéraire" collected money to offer an award of 50,000 francs for a good book written in French. One must not forget to mention the periodical appearing in England with no diminished success ever since its foundation in 1940, with some of the best French names as contributors, *La France libre*.

In America a great deal was done to keep interest in French culture alive. Many French refugees,

many writers among them, settled down, in New York and elsewhere, and wrote what they could not have written overseas: André Breton, Gustave Cohen, Dekobra, Focillon, Maeterlinck, Maritain, Maurois, Pertinax, J. Romains, Rougier, Saint-Exupéry, Mme. Tabouis, H. Torrès, Verneuil, . . . not to mention Julien Green who came "home." Some have been discreet in accepting the hospitality, some less. Quite a number of French books were published in America, especially in the "Editions de la Maison française," and by Brentano—both in New York. In Canada the number of French publications was even greater. Consult their *Bulletin Bibliographique de la Société des Écrivains Canadiens* (Montréal). Literature, history, politics, religion, science—no domain remained unexplored. As to journals in French, they flooded the country: *Voici la France* a monthly published at Carmel, N.Y., which endeavors to offer impartial news; *La Voix de France*, violently anti-Vichy, was started in September; *Amérique* (N.Y.); *Le Travailleur* (Worcester); *Le Messager* (N.Y.); the *French Forum*, quite recently launched in New York; *France speaks*, a weekly mimeographed. In Canada, *La Presse quotidienne* claims the largest circulation as an American daily in French; *La nouvelle relève*; *Bulletin des Études françaises* (Montréal).

Many of the books of the year are comments on the war, and some of them exhibit real literary skill: Lazareff, *Dernière édition. Dix ans de la vie de Paris*—a sort of introduction to the great tragedy; Alex. Werth, *Les derniers jours de Paris*, Mme. Colette, *Journal à rebours*; P. Pélaudau, *On disait en France*, impressions of a young Canadian who happened to be in France just before the war and knew a number of celebrities there; André Morize, *Paris. Été 1940*, by one who witnessed the débâcle, himself having served in the "Bureau of Information" since 1939—and a moving account it is, René de Chambrun (son-in-law of Laval), *De la Lorraine à Washington* (in English, *I saw France fall*); Benoit-Méchin (once attached to the Vichy Government) *La moisson de Quarante*; Max Beer, *La guerre n'a pas eu lieu*. Mme. Margaret Hughes (collaborator of the generous Miss Anne Morgan), *Les lauriers sont coupés*. Let us add: Pierre Mac-Orlan, *Chronique de la fin du monde*, and Fr. Carco, *Nostalgie de Paris*.

The following are less accounts of the tragedy than attempts at interpretation of events; most of them are by writers who took refuge in America: André Maurois, *Tragédie en France*; Jacques Maritain, *A travers le désastre* and *Le crépuscule de la civilisation*; Jules Romains, *Sept mystères du destin de l'Europe* (also published in English and which was received with much reserve); R. Goffin (a Belgian lawyer very active for the cause), *Le roi des Belges a-t-il trahi?*; Robert de Saint-Jean, *Démocratie, beurre et canon*; Pierre de Lanux, *France de ce monde*. Some portraits of eminent figures in the tragedy: Georges Suarez, *Le maréchal Pétain*; Henri Torrès, *Pierre Laval*; Philipp Barrès, *Le Général de Gaulle*. Some who have romanced the war in novels are: René Benjamin, *Printemps tragique*; R. Goffin, *Le fusilier de Dunkerque* and *Les cavaliers de la déroute*; M. Dekobra, *Emigrés de luxe* and *Le Journal d'un lâche*; Clément Riche, *Dernier voyage du Pembroke* (an old cargo); Claire Goll, *Le tombeau des amants inconnus*. (*The Nation*, Dec. 6, published, "Literature of the French Defeat," by a writer somewhere in France.)

Literary productions which try to keep clear of the bloody world conflict are rather astonishingly abundant. In the domain of poetry, literary prizes

have been awarded: the "Prix Alfred Mortier" went to Georges Delaguys for a *Naissance de Tristan*, and a "Grand Prix Fabier-Artigues" to Maurice Magre for *Parc de rossignols*; the "Prix Morès" to André Blanchard for *Entre jour et nuit*. In Canada two women earned poetic laurels: Simone Routier, of Ottawa, published a collection, *Tentation*, in the style of Paul Claudel, and Cécile Chabot, with a religious note too, *Vitrail*. Also from Canada: René Larnier, *Images et proses*; Claude Couban, juvenile dreams in *Visages transparents*. The 50th anniversary of the death of Rimbaud was observed in the ruins of his native town of Roches which had just been razed by the Germans. A young American poet Clark Mills (now at Cornell University) offered a translation in English verses of Mallarmé's fragmentary drama *Hérodiade*. Péguy, Mallarmé, and Verlaine inspired critical studies.

The activity on the stage has been great, considering the circumstances. Theaters opened, but mostly with "reprises." Molière, Racine, and many authors "au-dessus de la mêlée" could be offered without risk on the part of the Nazi authorities. Copeau, at the head of the Comédie française was one of the first to reopen, offering *Le Cid*, *Le Gendre de M. Poirier*, *Le paquebot Tenacity*, *Noë* . . . ; Dullin resumed with his former success *Plutus*; Baty with *Les caprices de Marianne*. Among other "reprises" were *La famille Monestier* (D. Amiel) and *La Grande Catherine*. Guitry even risked a new play, *Le Bien aimé*. And Souplex, with Mme. Colette, risked a *Revue*. In the unoccupied zone companies were organized to go on the road, one by Jacqueline Porel (the granddaughter of Réjane); another by Jean Noham and Claude Dauphin; still another by Léo Savage, called "Compagnie de la Basoche." Péguy's *Jeanne d'Arc* and Paul Claudel's *L'Annonce faite à Marie* were repeatedly presented in the unoccupied zone to keep up the morale of the nation. Jules Romains's timely play, which had been accepted by the Comédie française, *Pitié encore pour la terre*, was presented in a sort of world première at Middlebury College Language Summer School, Vermont, the parts being read by French professors with the author being present. The play is awaiting a regular production in New York.

Professor Baldensperger, now living in California, published a French play in verse, *Cassandre*; it deals with ideas parallel to those of Jules Romains—what can the future mean for the world? Louis Verneuil, the playwright, now in New York, published a book, *La vie glorieuse de Sarah Bernhardt*, whom he had known and for whom he had written plays.

One may well be amazed to find how many nonwar novels could be published in the sad year 1941. First—published in New York—were two more volumes of Jules Romains' *Les Hommes de bonne volonté*; both deal with the repercussion of World War I, in Russia, and the sanguinary revolution in that country which tried to inaugurate a new kind of civilization. Their titles are *Cette grande venue leur de l'Est*; the other, a continuation, is called *Le monde est ton aventure*. François Mauriac gave a novel which may be considered a counter-part of his play *Asmodée* (1937), and called *La Pharisienne*. Henri Bordeaux is less pessimistic in *Les murs sont bons*. Pierre Benoit in *Notre Dame de Tortosa* takes up a theme that reminds one of Loti's *Les Désenchantées*. One of the most striking novels of 1941 was Julien Green's *Varouna*—name of the Vedic deity of reincarnation. It is in three episodes which connect over centuries;

the first takes place in prehistoric times, the second at the time of the Renaissance, the third in modern days. Several novels have a religious atmosphere, like the posthumous *Evasion*, by A. Lichtenberger; *Tentation*, by Paule Régnier (the author of *L'Abbaye d'Évolène*); *La porte fermée* (in the vein of Paul Bourget), by Phil Darciat; Gautier-Vignol, *Les Somnambules*.

The duty of the French people to remain faithful to the good soil of France and cultivate it is suggested in Claude Jolly's *Antoine*, and in Henriette Roussel's *À quatre pas de Souceyrac*. Félix de Chazournes had a "roman de voyages" (in Europe and South America) in *Agnès ou le Rivage de Bohème*. Noëlle Roger depicts through her own imagination a country where modern civilization had not brought its curse, *La vallée perdue*. Some other titles are A. Billy, *Le double assassinat de la Maison du boeuf*; Maxence van der Meersch, *Pêcheurs d'hommes*; Simenon, *Le coup de vague*; Marcel Aymé, *Le boeuf clandestin*. Two novels, by well known authors, were started in the *Revue des Deux Mondes*: Maurice Genevoix, *Le lac fou*, and Duhamel, *Suzanne et les jeunes hommes*. Three volumes of short stories stand out—Mme. Colette, *Chambre d'Hôtel*; Francis Robert, *L'Oie*; Blaise Cendrars, *D'Oultrre-Mer à Indigo*. A Canadian novel, by Léon Desrosiers, *Les opiniâtres*, may well compare with the famous *Trente arpents*, by Ringuet (see YEAR BOOK, 1940).

Under the title *Varia* one could mention a long list of books on French history, geography, travel—all signed by excellent French authors who, evidently, were not allowed to use their talents in their preferred fields. Quite a few of these books treat religious topics, lives of saints, or missionaries. For example, there is an anthology of old medieval stories of the Virgin, by the brothers Tharaud; another anthology, *Paysans d'aujourd'hui* is by Marcel Braibant. There are the *Mélanges*, by Paul Valéry; *Souvenirs littéraires*, by Julien Green; *Souvenirs d'un journaliste*, by Clément Vautel; and also souvenirs by Raïssa Maritain (sister of the philosophers) called *Les grandes amitiés*. We need not dwell here on Gontran de Poncins's *Kabloona*, that remarkable description of the life of the Eskimos, which had as much success in the English version as in the French.

A few words must be said about literary history and literary criticism. Activity along this line has been hardly less than in normal years, but this is due to the considerable contributions brought by American scholars. Readers will easily see by the names given whether books have been written in France or in America: In linguistics, A. Dauz, *L'Europe linguistique*, and A. Thérive, 3d and last of the series *Querelles de langage*. In medievalism, *Anthology of Troubadours provençaux*, by Thompson and Bergen (Yale University Press); Mary Rouck, *Sources du roman de Brut* (Univ. of California). In the 16th Century, Chaigne, *Anthologie de la Renaissance catholique*; A.-M. Schmidt, *Poésie scientifique au XVI^e siècle*. In the 17th Century, Professor Lancaster, of Johns Hopkins, continues his monumental publication, *History of French Dramatic Literature*, with two volumes on Racine; E. E. Williams, *Racine depuis 1885* (bibliography); Helen Monod-Cassidy, *Un voyageur-philosophe au XVII^e siècle. L'abbé Leblanc* (Harvard Press). In the 18th Century, Ira O. Wade, *Voltaire and M^{me} du Châtelet*; H. A. Grubbs, *J. Bapt. Rousseau* (both Princeton Press); R. M. Spurlin, *Montesquieu in America* (Univ. of Louisiana Press); Albert Schinz, *État présent des Etudes sur J.-J. Rousseau* (pub. by Modern Lang. Ass. of America); D. Mornet, *Did-*

rot. In the 19th Century, *Oeuvres d'André Chénier*, ed. by G. Walter (Ed. de la Pléiade); J. Fourcassié, *Le Romantisme et les Pyrénées*; Louis Bertrand, *Lamartine*; M. Bardèche, *Balzac romancier*—up to Père Goriot; R. P. Bowen, *The dramatic construction of Balzac*; A. Feuillerat, *Baudelaire et la Belle aux cheveux d'or* (Yale Press); Art. Artinian, *Maupassant Criticism in France* (Crown Press, N.Y.); Seymour Travers, *Catalog 19th cent. theatrical parodies in France, 1789-1914* (Crown Press, N.Y.); G. Truc, M^{me} Colette; Bachelard, *Lautréamont*; S. Pelletier, *La nature de la grâce chez Bourget* (Toronto); H. C. Hunt, *History of 19th cent. Epic in France* (Blackwell, London). In the 20th Century, Garret Rees, *Remy de Gourmont. Essai de biographie intellectuelle* (Boivin); three books on Péguy, by Daniel Halévy, Roger Secrétain, Alex. Marc; Maurois, *Etudes* (six contemporary authors); Rousseaux, *La littérature du XX^e siècle* (essays); H. Navon, *French Theater in New York*, René Lalou, *Littérature contemporaine Vol. II*, F. Baldensperger, *Littérature entre deux guerres* (Los Angeles). For Canada, see Antoine-Joseph Jobin, *Visages Littéraires du Canada*.

Very few reports crossed the ocean regarding personalia. The following deaths were announced: Henri Bergson, Marcel Prévost, Louis Bertrand—all three of the French Academy; also Gilbert des Voisins, Fernand Herold, Pierre Mille, Henri Spiess; the famous actress Julie Bartet; the "Jeanne" of Victor Hugo's *L'Art d'être grand-père*, M^{me} Négrepont-Hugo.

The "Académie Goncourt" announced the intention to award their famous "Prix Goncourt" late in December, perhaps even to award two, since last year's was not awarded.

ALBERT SCHINZ.

FRENCH OCEANIA. The French possessions in the eastern Pacific, comprising several groups of islands, of which the principals are: Society, Marquesas, Tuamotu, Leeward (Îles sous le Vent), Gambier, Astral, and Rapa islands. Tahiti (600 sq. mi.; pop. 19,029 in 1936), of the Society group, is the main island. Total area, 1,520 square miles. Total population (Jan. 1, 1938), 45,000. Capital: Papeete (on Tahiti), 8,456 inhabitants. Copra, vanilla beans, phosphate, and mother-of-pearl are the chief products. Trade (1939): 80,482,000 francs for imports and 63,536,000 francs for exports (franc averaged \$0.0251 for 1939). Budget (1939): 27,560,000 francs (revenue and expenditure balanced). French Oceania continued under the control of the "Free French" movement of Gen. Charles de Gaulle during 1941. Governor, Gen. Richard Brunot.

FRENCH SOMALILAND. A French colony in Africa, at the southern entrance to the Red Sea. Area, 8,492 square miles; population (1936 census), 44,240, including 27,380 Somalis, 4,200 Arabs, 12,000 Danakils. Djibouti, the capital, had 20,000 inhabitants in 1939.

Production and Trade. The chief occupations of the people were fishing, salt mining, and the transit of goods to and from the interior. Trade (1938): imports, 147,700,000 francs (the chief imports were cotton yarns, cotton goods, cattle, coal, and sugar); exports, 85,300,000 francs (the main exports were coffee, hides, and salt). The 1938 transit trade was valued at 521,563,195 francs (franc averaged \$0.0288 for 1938; \$0.0251 for 1939). Shipping entered at Djibouti in 1938 totaled 2,823,096 tons. There is a railway from Djibouti to Addis Ababa, Ethiopia, 496 miles in length.

Government. Local budget (1939): 26,000,000

francs (revenue and expenditure balanced). The colony was administered by a governor, assisted by an administrative council. Governor in 1941, M. Nouailhetas.

History. French Somaliland remained under the control of the Vichy government in France in spite of the efforts of British and "Free French" forces to win the colony over to the cause of Gen. Charles de Gaulle. It was announced, according to a report from Vichy on June 11, 1941, that the colony had rejected Gen. Sir Archibald Wavell's offer of "preferential treatment" if it rallied to the banner of General de Gaulle. A report of June 13 announced that the colony was completely surrounded by British-controlled territory on land and blockaded from the sea. The Vichy government endeavored to supply the colony by means of transport planes which carried medicines, mails, and instructions for the French governor to hold out against any British threats or attacks.

On Oct. 30, 1941, it was reported that the governor had offered to negotiate the British request for the use of the railway to Addis Ababa and the port of Djibouti. The governor informed Vichy officials that he also would discuss with the British the lifting of the blockade of French Somaliland so that medicine and food supplies could be sent to combat an outbreak of scurvy.

Vice Admiral Rene Platon, French Minister of Colonies, on his return to Vichy (Nov. 11, 1941) from an air trip to French Somaliland, asserted that the French declined to negotiate further when the British said that foods would merely go through Djibouti in transit to Ethiopia and the blockade of French Somaliland would continue. The governor informed the British "that if that was their attitude they would never be able to use the railway, for if the French were forced by famine to surrender they would blow up the port and the railway." Admiral Platon, announced on the same day, that British planes had dropped warnings that the British would execute any persons found guilty of destroying the railway or port facilities at Djibouti.

See WORLD WAR.

FRENCH SUDAN. See FRENCH WEST AFRICA.

FRENCH TOGO. See TOGO, FRENCH.

FRENCH WEST AFRICA. A French colonial federation made up of the colonies shown in the accompanying table.

Colony	Sq. ms	Pop (1937)	Capital
Dahomey	43,232	1,289,128	Porto-Novo
Dakar*	60	120,929	Dakar
French Guinea	96,886	2,065,527	Conakry
French Sudan	590,966	3,635,073	Bamako
Ivory Coast	184,174	3,981,459	Abidjan
Mauritania	323,310	370,764	
Niger	499,410	1,809,576	Niamey
Senegal	77,730	1,666,374	St Louis
French West Africa	1,815,768	14,944,830*	Dakar

* Including dependencies † The lieutenant-governor of Mauritania resides in St. Louis, Senegal ‡ The total population included 26,614 Europeans, of whom 18,188 were French.

Chief towns: Dakar (capital), 42,000 inhabitants; Kaolak, 39,981, St. Louis, 35,927; Porto-Novo, 27,483; Bamako, 32,761 (1940), Abidjan, 26,143; Thiès, 18,915, Bobo-Diulasso, 18,589; Ouagadougou, 16,595, Kayes, 15,894 (1940). Education (1937-38): 514 schools of all kinds and 68,310 pupils.

Production and Trade. The principal agricultural products are groundnuts, maize, rice, palm kernels and oil, cottonseed, coffee, cotton, tobacco, sesamum, and cacao. Gold was the chief mineral, the produc-

tion for 1939 amounting to 129,889 troy oz. Trade (1938): 1,627,200,000 francs (textiles, fuel oil, mechanical implements, food substances, and beverages were the main items); 1,416,100,000 francs (groundnuts, cacao, gold, palm oil, timber, coffee, fruits, and gum were the main items). The franc averaged \$0.0288 for 1938; \$0.0251, 1939.

Communications. In 1938 there were 2,453 route miles of railways. The construction of the Trans-Sahara railway was authorized by a law dated Mar 22, 1941, signed at Vichy, France, by the French Chief of State. Bou-Arfa, French Morocco, was selected as the northern terminus of the railway. In the south it will touch the Niger, by means of two branches, at Segou and Naamey where connections will be made with the railway system of French West Africa. Highways extended 33,565 miles in 1940.

Finance. General budget (1939): 349,000,000 francs (revenue and expenditure estimated to balance). The financial estimates for 1938 were estimated to balance, as follows: 335,000,000 francs for general budget, 498,162,000 francs for local budgets, 293,102,000 francs for supplementary budgets.

Government. The federation of French West Africa was under the general rule of a governor general, aided by a council. Each colony was administered by a lieutenant governor, subject to the governor general at Dakar. Governor General, Gen. Pierre Boisson.

History. On Jan 12, 1941, Pierre Boisson, the Governor General, returned to Vichy, France, and reported that the "Free French" movement was decreasing in French West Africa. Private advices reaching Rio de Janeiro, Brazil, on Mar. 2, 1941, asserted that 1,500 European refugees (Austrians, Belgians, Czechs, Jews, Netherlanders, and Norwegians) were stranded at Dakar, French West Africa, where they arrived on the French ship *Alsina*. Scheduled to reach Rio de Janeiro on Feb 7, 1941, the *Alsina* after leaving Gibraltar was ordered by Vichy to put into Dakar. Fear that the British would seize the ship was thought to be the reason for the order.

A report from Vichy, May 24, 1941, announced that Lieut. Jean Montezet was sentenced *in absentia* to death and eight others received prison terms for plotting the surrender of Dakar to the "Free French" forces of Gen. Charles de Gaulle. Refugees arriving in the United States, May 24, 1941, reported that French military authorities were strengthening the base at Dakar, by using the forced labor of foreigners in the Foreign Legion, Spanish republicans, and Jewish refugees. Other refugees were working on the construction of the Trans-Sahara railway (see *Communications* above). Most of an allotment of 128 million francs made by the Vichy government was for the improvement of the base at Dakar to which Foreign Legion reinforcements were reported, in September, to have been sent.

The French at Vichy announced on Sept. 12, 1941, that Abidjan, in the Ivory Coast colony, was being transformed into "one of the most secure natural harbors in the world." Work on the harbor, which had been underway since June, was estimated to be completed in two years. The largest vessels would be able to stay in the sheltered lagoon (75 miles long, 2 to 4 miles wide, and 16 to 25 yards deep) to which a broad channel (375 yards wide and over 15 feet deep at low tide) was being cut from the sea. Dakar in Senegal and Abidjan in the Ivory Coast would bracket the British port of Freetown, Sierra Leone. See PORTS AND HARBORS.

At Vichy, Sept. 22, 1941, Governor General Bois-

son declared to French, German, and other foreign press representatives that all French West Africa was solidly behind Marshal Pétain. He repeated the declaration he had made many times that there were no Germans in French West Africa. In a dispatch from Dakar it was reported that 29 Africans were sentenced to death on Oct. 20, 1941, for an attack on a Dakar hotel last August when five Frenchmen were killed. Immediate execution of the sentences was ordered by the military court.

FREON. See HEATING AND VENTILATING; PHYSICS under *X-Ray Machines*.

FREQUENCY MODULATION. See RADIO.

FRIENDLY ISLANDS (TONGA). See BRITISH EMPIRE.

FRIENDS (QUAKERS). A religious group founded in England by George Fox (1624-91), which teaches the doctrine of nonresistance and the absence of outward ordinances. There are four denominations of Friends in the United States, the oldest and largest of which is the Orthodox Society of Friends. Headquarters, Richmond, Ind. For statistics, see RELIGIOUS ORGANIZATIONS.

FRUIT. See ENTOMOLOGY, ECONOMIC; HORTICULTURE.

FSA. Farm Security Administration. See AGRICULTURE, U. S. DEPARTMENT OF.

FTC. Federal Trade Commission.

FUEL. See CHEMISTRY, INDUSTRIAL under *Fuels*, ELECTRIC LIGHT AND POWER; LIVING COSTS AND STANDARDS, RAILWAYS, RAPID TRANSIT, TAXATION; also, COAL AND COKE, GAS INDUSTRY, ETC.

FUKIEN. See CHINA under *Area and Population*.

FURNITURE, FURNISHINGS. See BUSINESS REVIEW under *Other Industries*, LIVING COSTS.

FURS. See FASHION EVENTS; GARMENT INDUSTRY. For fur production, see ALASKA. For **FUR ANIMALS**, see ZOOLOGY under *Mammals*.

FUTUNA AND ALOFI. See NEW CALEDONIA.

FUTURES EXCHANGES. See MARKETING.

GABUN. See FRENCH EQUATORIAL AFRICA.

GALÁPAGOS ISLANDS. See ECUADOR, under *Area and Population and History*.

GAMBIA. A British colony and protectorate in West Africa, occupying each bank of the Gambia River for a distance of 300 miles from the coast. Total area, 4,068 square miles; total population (1938 estimate), 205,000, as against (1931 census) 199,520. Capital, Bathurst, where resided most of the 14,370 inhabitants of the island of St. Mary. Education (1939): 10 elementary and secondary schools and 2,148 pupils enrolled.

Production and Trade. Groundnuts (50,600 metric tons exported in 1939), palm kernels, hides, skins, and beeswax were the chief products. Rice, maize, guinea corn, cassava, and cotton were grown for local consumption. Trade (1939): £386,161 for imports; £557,304 for exports. The main imports were aircraft parts, cotton piece goods, metals, and kola nuts; the main exports, groundnuts and palm kernels. Shipping (1939): 414 ships aggregating 955,110 tons entered and cleared.

Government. Finance (year ended Dec. 31, 1939): £151,744 for revenue; £205,889, expenditure; £39,760, public debt. The area of the colony (Bathurst, Georgetown, and some adjacent land) is 69 square miles, but by an ordinance enacted in 1902, all Gambia except the island of St. Mary (4 sq. mi.) was placed under the protectorate system. In the protectorate there are 4 provinces each administered by a commissioner, responsible to the gover-

nor who controls the whole country. There is an executive council of 4 members who assist the governor, and a legislative council for the colony (consisting of 10 members over which the governor presides) which has power to legislate for the protectorate. Governor and Commander-in-Chief, Sir Wilfrid T. Southorn (appointed Mar. 10, 1936).

History. It was announced in August, 1941, that in the event of an attack from the air, land, or sea on the town of Bathurst the evacuation, at short notice, of all children with their mothers, all aged persons, and all unemployed persons would be required by law. The ferrying, by Pan American Airways, of warplanes from the United States to West Africa and then to Khartoum was reported during September, 1941. Leaving the United States the warplanes would fly via Puerto Rico, Trinidad, Port Natal in Brazil, Monrovia in Liberia or else Bathurst in the Gambia, to Lagos in Nigeria. A continuation to Léopoldville, Belgian Congo, would connect with airlines serving South Africa, Uganda, and Tanganyika. In addition, Pan American Airways were to establish an air transport service between West Africa and the Middle East to connect with a new American airline between the United States and West Africa.

GAMBIER ISLANDS. See FRENCH OCEANIA.

GARBAGE AND REFUSE DISPOSAL. Joint treatment works for the disposal of garbage and sewage continue to increase in number. The garbage is ground or shredded, then thrown into a tank for digestion with sewage sludge. The gas from the digestion process may be utilized for power or for burning the tankage in case it is incinerated. Such joint means of treatment is generally confined to small cities. For some of these sewage alone might not produce enough gas to make its utilization possible. Cities recently installing joint garbage-sewage treatment include Goshen and Menands, N.Y. Reduction plants, once used to reclaim grease and tankage from the garbage of a number of large cities, have diminished to the eight named in the YEAR BOOK for 1940. Few if any of these attempted to dispose of the tankage commercially on account of the cost of processing and the low market price of such tankage. Even the grease is a gamble, owing to the fluctuating price. The first world war sent up the price of garbage grease. The price rose materially shortly before the United States went into the second world war. Whether it will go to the old-time high remains to be seen.

At Rochester, N.Y., steam for operating the garbage reduction plant is obtained from the incineration of combustible wastes. Ashes and incombustibles, during 1940 and 1941, were placed in trenches 8 ft. wide by 25 ft. deep, dug by a dragline excavator and covered by pushing back the excavated material by bull dozers.

At Washington, D.C., reduction is still used for part of the garbage, but much of it is diverted at the shipping station and fed to privately-owned hogs in Maryland and Virginia. The reduction works, far outside the city, are operated below capacity. Grease only is recovered for sale. Tankage was once dried, ground and sold as a fertilizer base but owing to its low sale price and the fire and dust hazards in processing it, the tankage latterly has been dewatered by pressing and then used to generate steam by burning it in specially designed furnaces of the Dutch oven type. Trash is collected once a week. It is burned, with street sweepings, in two high-temperature destructors. A third is being built to handle the recent enormous increase of

refuse. Ashes are collected weekly. They are used to fill low ground and for temporary surfacing of new streets. At Detroit, one of the four incinerators built two or three years ago was enjoined from burning garbage on account of alleged nuisance but may be used to burn combustible refuse. The city attributed the difficulty to the low percentage of combustible material from the district but was unable to stop complaints by adding auxiliary coal.

Probably the larger part of the garbage of American cities is disposed of by sanitariously-operated land fills or by feeding to hogs. These two methods of disposal require comparatively little capital outlay. Garbage eaten by hogs yields more revenue than any other method of disposal. Toward the end of the year a campaign to salvage newspapers, magazines, waste paper generally, cardboard and cartons made from pulp wood was begun. This starts at the home, office, and store, from which collections are made without charge by the Salvation Army and other agencies, thus conserving vast quantities of material and reducing city expense for collection and disposal. Some of the land reclaimed by sanitary land fills of New City is being used by the Federal Government. ("Landfills Aid National Defense," *Engineering News-Record*, Sept. 25, 1941.)
N. N. BAKER.

GARMENT INDUSTRY. The various divisions of the men's and women's apparel industry generally maintained the status quo or showed a slight rise in volume and profits for 1941 as compared with the previous year. The pace of business for the first nine-month period gave every indication of producing year-end results materially in excess of those experienced in 1940, but a virtual stagnation in consumer demand starting in October nullified much of the earlier strides.

Blame for this condition was attached to the "beat the sales tax" drums which the stores had sounded in their advertising of furs and jewelry prior to the impost by the Federal government of a 10 per cent retail tax upon these articles as of October 1, and which had rolled up sales' response for August and September that often bettered records of many years' standing. Without the tax-saving incentive, it was held, much of this volume would have been gained during the balance of the year.

With business at high pitch in the early fall, many fur manufacturers had proceeded to pile up raw fur stocks at the season's highest prices and turn them into garments, with the intention of capitalizing to the full what loomed up on the horizon as ever brighter vistas. "Caught in the middle" when lassitude enveloped fur trade activity immediately after September 30, manufacturers resorted to deep price slashes in the attempt to reawaken retail and consumer interest. This step was successful to some extent in November and on an ever wider scale during December.

Entrance of the United States into open conflict with the Axis powers in December was reflected in the knowledge that Far Eastern, Russian, and Australian furs, used in the manufacture of from 20 to 25 per cent of the estimated annual American production of one million fur garments, would be extremely difficult to obtain from original sources during the ensuing year. This was tempered with the thought that large quantities of Russian and other furs from that hemisphere had reached our shores in 1941.

The ups and downs of fur activity were echoed in the women's coat and suit trade. A substantial rise was experienced in spring volume. Fall busi-

ness, however, dropped drastically from its high point in September. Nevertheless, the year ended quite satisfactorily. Label sales of the National Coat & Suit Industry Recovery Board, whose members are responsible for 90 per cent of the country's total production of their garment types, reached an 11 months' figure, up to November 30, exceeding that of any full year since the Board's inception in 1936. The label sales' figure of approximately 18 million for the 11 months was 21.5 per cent over that of the year previous.

An important development in this branch of the industry was the Federal Trade Commission charge against the Recovery Board of restraint of trade, and the subsequent engagement by the Board of Wendell L. Willkie as counsel in this case.

Popular priced dresses gained strongly in the first six months' period, but lost ground in the latter half of the year. Volume in the better end of the trade lagged, notably in formal wear. A lower average unit sale prevailed. Sportswear constituted one of the brightest spots in the ready-to wear picture, entrenching its status as a year-round merchandising item. The trend to casual coats, suits, dresses, and slacks was accentuated.

The men's wear trade witnessed an accumulation of topcoat and overcoat inventories in the last few months of the year because of adverse weather conditions. However, these overhanging stocks were not deemed a source of worry, as the manufacturers realized that an increasingly larger portion of their plant capacity would have to be allocated to government output.

As the year ended, the apparel trades girded themselves for participation in the war effort on an ever-widening scale. They pondered the results of absence from the purchasing market of millions of men of draft age; to what extent uniforms for women would replace usual apparel; the repercussions of less traveling, less formal entertaining, and curtailment of automobile production upon the clothes' picture. They recognized that the urge to buy and the desire to retrench would follow closely the changing fortunes of the Allies.

See CHEMISTRY, INDUSTRIAL under *Plastic Wearing Apparel and Textiles*; FASHION EVENTS; LIVING COSTS AND STANDARDS; TEXTILES.

SAMUEL FEINBERG.

GASES. See BOMBS. For **GAS MASKS**, see CIVILIAN DEFENSE, OFFICE OF.

GAS INDUSTRY. In several noteworthy respects, operation of the gas industry in 1941 set up new records. Customers served reached a new high and so did sales and revenues of the combined manufactured and natural gas industries. At the year end, 18,618,000 customers, representing the largest number ever connected to the mains of the industry, were served by manufactured and natural gas companies. This was an increase of 627,000 over the year 1940. As between the two branches of the industry, manufactured gas companies now serve 10,430,000 customers and the remaining 8,188,000 are served by natural gas companies. Total population reached by the industry is approximately 85,000,000.

Revenues of the entire industry, both manufactured and natural, aggregated \$909,441,000, the largest ever recorded, a gain of 4.3 per cent over 1940. Natural gas companies grossed \$522,053,000, a gain of 6.0 per cent for the year, and a new high, while revenues of the manufactured gas companies were \$387,388,000, as compared with \$379,023,000 in 1940, an increase of 2.2 per cent.

STATISTICS OF THE GAS INDUSTRY

Statistical Department, American Gas Association

Customers	1941*	1940	Change %
Domestic (Incl.)			
House Heating)	17,534,000	16,922,000	+3.6
Commercial	992,000	978,000	+1.4
Industrial	92,000	91,000	+1.1
Total	18,618,000	17,991,000	+3.5
Gas Sales (MCF)			
Domestic (Incl.)			
House Heating)	682,109,000	686,782,000	-0.7
Commercial	185,922,000	180,900,000	+2.8
Industrial	1,137,232,000	963,644,000	+18.0
Total	2,005,263,000	1,831,326,000	+9.5
Revenue (Dollars)			
Domestic (Incl.)			
House Heating)	\$583,398,000	\$584,417,000	-0.2
Commercial	106,723,000	104,491,000	+2.1
Industrial	219,320,000	182,832,000	+20.0
Total	\$909,441,000	\$871,740,000	+4.3

* Preliminary estimates.

Sales of natural gas for industrial purposes rose from 716,668,000,000 cubic feet in 1940 to 851,635,000,000 cubic feet in 1941, an increase of 18.8 per cent and an all-time record increase for this class of consumption. Sales of manufactured gas for industrial purposes rose from 61,768,000,000 cubic feet in 1940 to 79,466,000,000 cubic feet in 1941, an increase of 28.7 per cent, and another record-breaking increase. Total gas sales reached a new peak of more than two trillion cubic feet.

THE MANUFACTURED GAS INDUSTRY

Statistical Department, American Gas Association

Customers	1941*	1940	Change %
Domestic	9,608,000	9,405,000	+2.2
House Heating	361,000	305,000	+18.4
Commercial	418,000	413,000	+1.2
Industrial	33,000	35,000	-5.7
Miscellaneous	10,000	9,000	—
Total	10,430,000	10,167,000	+2.6
Gas Sales (MCF)			
Domestic	198,287,000	198,752,000	-0.2
House Heating	66,606,000	68,498,000	-2.8
Commercial	57,947,000	58,356,000	-0.7
Industrial	79,466,000	61,768,000	+28.7
Miscellaneous	2,621,000	2,260,000	—
Total	404,927,000	389,634,000	+3.9
Revenue (Dollars)			
Domestic	\$259,168,000	\$258,153,000	+0.4
House Heating	43,259,000	43,247,000	0.0
Commercial	49,640,000	48,568,000	+2.2
Industrial	33,733,000	27,653,000	+22.0
Miscellaneous	1,588,000	1,402,000	—
Total	\$387,388,000	\$379,023,000	+2.2

* Preliminary estimates.

In the household use of gas, such as cooking, refrigeration, house heating, water heating, etc., manufactured gas companies sold 264,893,000,000 cubic feet, a decrease of 0.9 per cent for the year. Gas consumed for house heating registered a decrease of 2.8 per cent. Sales of natural gas for domestic uses including house heating, also registered a slight decrease, falling from 419,532,000,000 cubic feet in 1940 to 417,216,000,000 cubic feet in 1941, a loss of 0.6 per cent. Preliminary estimates indicate that the total production of natural gas in 1941, including amounts used in the manufacture of carbon black and for field use, will reach a total of approximately three trillion cubic feet. Approximately 204 billion cubic feet of natural gas were used as fuel for generating electric power in 1941, an increase of 21 billion cubic feet over the previous year.

The outstanding development of the year was the phenomenal increase in sales of gas ranges. Total number sold during 1941 was 2,400,000 units—the highest record in the history of the industry, according to the Association of Gas Appliance and Equipment Manufacturers. Actual sales' increase over 1940 was 657,500 units or 38 per cent. Some 750,000 automatic gas water heaters were sold dur-

THE NATURAL GAS INDUSTRY

Statistical Department, American Gas Association

Customers	1941*	1940	Change %
Domestic (Incl.)			
House Heating)	7,565,000	7,212,000	+4.9
Commercial	574,000	565,000	+1.6
Industrial	49,000	47,000	+4.3
Total	8,188,000	7,824,000	+4.7
Gas Sales (MCF)			
Domestic (Incl.)			
House Heating)	417,216,000	419,532,000	-0.6
Commercial	127,975,000	122,544,000	+4.4
Industrial	851,635,000	716,668,000	+18.8
Electric Generation	203,510,000	182,948,000	+11.2
Total Ind. & Elec Generation	1,065,145,000	899,616,000	+17.3
Total	1,600,336,000	1,441,692,000	+11.0
Revenue (Dollars)			
Domestic (Incl.)			
House Heating)	\$280,971,000	\$283,017,000	-0.7
Commercial	57,083,000	56,923,000	+2.1
Industrial & Elec. Generation	183,999,000	153,777,000	+19.7
Total	\$522,053,000	\$492,717,000	+6.0

* Preliminary estimates.

ing 1941. Furnace, boiler, and conversion burner sales showed an increase of more than 50 per cent. Gas refrigerator sales hit a new high in many localities prior to production restrictions on all automatic refrigerators.

Organization of the natural gas and natural gasoline industries for defense under the Office of Petroleum Coordinator (q.v.) was effected during the latter part of the year. The natural gas industry coordinated all of its defense activities with respect to production and transportation, and the processing and manufacture of derivatives of natural gas, including natural gasoline, liquefied petroleum gas, carbon black and re-cycling operations and their transportation. The appointment of Thomas R. Weymouth as consultant on natural gas was announced by the Office of Petroleum Coordinator.

Plans were underway at the close of the year toward bringing natural gas to the highly industrialized Appalachian region from the productive fields of Louisiana, Texas, and Kansas in order to supplement present supply. An 800-mile pipeline from the Monroe field in Louisiana to West Virginia is being planned to make additional quantities of natural gas available to Cleveland and vicinity.

THOMAS J. SHANLEY.

GASOLINE. See PETROLEUM.

GENERAL EDUCATION BOARD, The. An institution incorporated by an act of Congress in 1913, with the stated object of promoting education within the United States of America without distinction of race, sex, or creed. The present program of the Board is restricted almost entirely to the support of educational work in the Southern States.

The Board is empowered to spend the income and the principal of its funds. During the year ended Dec. 31, 1941, it appropriated approximately \$900,000. Among the larger donations were: \$160,000 to Meharry Medical College, Nashville, Tennessee, for the current expenses of the College and the hospital; \$50,000 to Paine College, Augusta, Georgia, for the construction and equipment of a library building; \$47,000 to Fisk University, Nashville, for current expenses; \$43,935 to Louisiana State University and Agricultural and Mechanical College for teaching and research in agricultural economics and research in rural sociology; \$35,000 for summer school projects and special conferences related to Board programs in southern education; \$32,100 to the University of Arkansas for research in farm forestry; \$30,000 to the Southern Associa-

tion of Colleges and Secondary Schools for support of work conferences on higher education and for evaluation of experimental secondary school programs; \$30,000 to the University of Tennessee for research in farm forestry in Tennessee; \$25,900 to the Board of Trustees of Institutions of Higher Learning of the State of Mississippi for the State teacher training program; \$25,250 to Clark College, Atlanta, for equipment for its physics laboratory; \$25,000 to Duke University for a study in forest ecology by the School of Forestry; \$25,000 to the University of Texas for the construction and equipment of a marine biological laboratory; \$25,000 to Tulane University for the development of its library, primarily for strengthening the graduate and research collections; \$25,000 to Vanderbilt University for research in the natural sciences; \$25,000 to Furman University, Greenville, South Carolina, for the development of its library; \$22,120 to the Association of Colleges and Secondary Schools for Negroes for improvement of instruction and administration in higher institutions, and \$7,250 for a workshop on secondary education to be held at Hampton Institute; \$17,500 to the Boy Scouts of America for support of work of the Committee on Inter-Racial Scouting; \$15,000 to Baylor University, Waco, Texas, for the development of a program in dramatics; \$15,000 to Dillard University, New Orleans, for the purchase of medical and surgical equipment for the Flint-Goodridge Hospital; \$14,600 to the North Carolina State Department of Public Instruction for support of summer training courses for whites and Negroes in connection with a program in public health education and school health service.

The executive officers of the General Education Board during 1941 were: Ernest M. Hopkins, chairman of the board of trustees; Raymond B. Fosdick, president; Albert R. Mann, vice-president and director; William W. Brierley, secretary; Edward Robinson, treasurer; George J. Beal, comptroller; Thomas M. Debevoise, counsel; Chauncey Belknap, associate counsel. The offices of the Board are at 49 West 49th Street, New York City.

GENETICS. See BOTANY; ZOOLOGY.

GEOGRAPHY. See SOCIETIES under *Geographical* and *Geographic*.

GEOLOGICAL SURVEY, U.S. Science and engineering, as applied by the Geological Survey, contributed largely to the war effort in 1941. Survey specialists in geologic and hydrologic fields and in topographic mapping conducted investigations and surveys in practically every State of the Union, Alaska, and Hawaii, and the geologists were active even in the faraway sister American Republics. About \$8,000,000 was made available to the Survey during the year, the larger part of which was expended in search for the minerals essential to national defense or in appraising or reappraising known deposits of such minerals; in measuring and recording the flow of streams and in furnishing to other defense agencies or industries hundreds of reports on surface and underground waters; and in surveys preliminary to topographic maps, without which neither war nor peacetime planning for land utilization can be successful.

Financed largely by special appropriations but in part by the regular appropriation for geologic surveys, the strategic and critical minerals investigations took precedence over all other geologic work. More than 150 detailed examinations were made of strategic minerals districts in the continental United States and Alaska and in other countries

of the western hemisphere. Investigations in California, Montana, Oregon, Wyoming, and Alaska resulted in preliminary estimates of tonnage and grades of chromite ore in those areas, reports of which were furnished to the defense agencies that were integrating domestic production with imports at a time when foreign sources of raw materials were being reduced. Comprehensive development work followed the Survey's studies in Montana. One chromite mine was opened and another started in the Stillwater district, and Survey geologists were hopeful that further explorations would permit the location of additional mines. In the Batesville district, Arkansas, important tonnages of medium and low-grade manganese were found, and in the Three Kids and Artillery Peak areas, Nevada, explorations made on the recommendation of the Survey revealed extensions of the known ore bodies of this vital mineral.

There were also successful studies of quicksilver mining districts. In the New Idria district, California, for example, which contains the mine of second largest total production in the United States, the Survey's investigations led to recommendations that search be made for the metal in relatively unexplored parts of the district, and in southeastern Oregon its geologic work revealed deposits so extensive, though of very low average tenor, as to suggest that they may prove a source of quicksilver under emergency conditions. An ore body of quicksilver was also uncovered in the Bottle Creek district, Nevada, as a result of the Survey's studies which disclosed, too, the presence of a large area of similar ground in which exploration is justified.

In the Yellow Pine antimony district, Idaho, the Survey pointed the way to exploration, and it seemed more than likely that further development would lead to the direct production of antimony in addition to the amount that is being recovered in antimonal lead as a byproduct of gold mining. But that is only part of the story of the Yellow Pine investigations. Microscopic examinations of its drill cores resulted in recognition of the tungsten mineral scheelite and that discovery, prompting further exploration, led to the finding of a large body of tungsten ore which promises to aid considerably the domestic production. Studies under the microscope also showed that scheelite is rather widespread in the Seven Devils district, Idaho, and these studies were being followed by a special search in the field for commercial concentrations of the mineral. Investigations of the tungsten districts in general and in California and Nevada in particular showed that the reserves of this mineral are larger than had been supposed and that the United States can at present prices supply a considerable part of its own demand during the next few years.

In Alaska, region of magnificent distances and untold mineral wealth, vitally important investigations of the strategic and critical minerals were begun in the field season of 1941 and carried into the next fiscal year. There were studies of chromite at Red Bluff Bay, Baranof Island; tungsten in the Hyder district, southeastern Alaska; antimony in the Kantushna district; nickel in Mirror Harbor, Chichagof Island, and Snipe Bay, Baranof Island; tin in the Hot Springs district, and Anikovik area, Seward Peninsula; quicksilver in the Sleitmut area, Kuskokwim region; and molybdenum in the Glacier Bay district. The Survey also assisted in drilling operations at Yakobi Island, off the northwest coast of Chichagof Island, and at Seldovia, near the southwestern tip of Kenai Peninsula, and carried forward its office and laboratory studies of those areas preparatory to the issuance of reports.

In the American Republics to the south, detailed examinations were made of tin, tungsten, and antimony ores in Bolivia, manganese and chromite ores in Brazil and Cuba, and tin ores in Mexico. Reconnaissance surveys were made of strategic mineral deposits in Venezuela, Colombia, Panama, Costa Rica, and Guatemala with a view to detailed studies later on. Geologic work in those countries has served the twofold purpose of revealing the sources of raw materials needed by the United States and of strengthening the ties of the Good Neighbor policy in both trade and cultural aspects. Meanwhile, the Survey continued some of its major geologic activities, notably the cooperative programs in the mining regions of Colorado, Idaho, and Oregon. Coordinated with the general strategic minerals program, they added materially to the basic information essential to the further development of mineral deposits.

In the field of topographic mapping the Survey surpassed its work of the previous year, covering nearly 30,000 square miles by the surveys that result in the 3-dimensional maps essential to the conduct of war as well as to the pursuits of peace. Mapping was done in 38 States, in the District of Columbia, Alaska, and in Puerto Rico. Largely of strategic areas selected by the War Department, the work was a major contribution to national defense. In addition, the Survey responded to many requests of the War Department for control-survey information. The most extensive service of this type was the preparation and rearrangement of material for microfilming copies of the results of all leveling, traverse, and triangulation done by the Survey, about 67,000 camera exposures being necessary to photograph the data. Aerial photographs acquired by the Survey during the year covered an area of several hundred thousand square miles, the larger part of which was for national defense mapping projects.

No less important to the defense program were the Survey's activities in the realm of hydraulic engineering. Basic data on existing sources of water supply and the quantity and quality of new sources of surface and underground waters were furnished for many types of defense projects, as was also much information concerning the danger to such projects from floods or low flow of streams in periods of drought. The Office of Production Management, the Army, the Navy, and numerous other Government and private agencies engaged in defense work were the recipients of this information. One of the prerequisites to the establishment of an Army cantonment, a Naval base, a powder plant, or other defense project is an adequate supply of water and water of suitable quality for the project. The needs of the defense agencies were met generally by research, compilation, and interpretation by the Survey of stream-flow records collected over a long period of time or by drilling test wells and installing pumps to ascertain whether there was a sufficient supply of water to serve the purpose. The Survey's advice in this specialized field influenced the selection of sites for many defense projects. Camp Claiborne, La., one of the Army's largest cantonments, was established only after the Geological Survey had solved the problem of finding a sufficient supply of water.

Geological Survey activities on the public lands also contributed to the national defense and conservation programs. The classification of those lands as to their mineral deposits and their water and power resources leads to their wisest use; and the supervision of private mineral development on public and Indian lands and naval petroleum reserves,

under leasing laws, protects the nation's interests as it guarantees efficient operation and standards of conservation that serve as examples to the mineral industry. During the year the Geological Survey made more than 8,100 reports upon mineral resources, water power, or storage possibilities of public lands, at the same time safeguarding the Government's ownership of great reserves of coal, oil, gas, potash, phosphate, and other minerals. Technical supervision was given to more than 5,200 properties containing oil and gas, more than 500 containing coal, and more than 100 containing other minerals. On Indian lands more than 4,100 oil and gas leases were supervised, in addition to more than 200 properties containing coal and other minerals. Minerals produced during the year from public and Indian lands and naval petroleum reserves under supervision of the Geological Survey, had an estimated value of \$71,000,000, and revenue received by the Government as a result of this supervision amounted to about \$7,000,000.

During the year the Survey published 643 reports, maps, etc., in total editions amounting to 1,377,805 copies, and distributed 1,301,160 copies.

W. C. MENDENHALL.

GEOLOGY. See GEOLOGICAL SURVEY, MINES, BUREAU OF; articles on minerals.

GEORGE FOSTER PEABODY RADIO AWARDS. See RADIO PROGRAMS.

GEORGIA. A south Atlantic State. Area: 58,876 sq. mi., including 358 sq. mi. of inland water, but excluding Atlantic coastal waters, 48 sq. mi. Population (1940 census): 3,123,723. The urban population comprises 34.4 per cent of the total (U.S. average, 56.5 per cent), non-white population, 34.7 per cent (U.S. average, 10.2); elderly (65 years and over), 5.1 per cent. Georgia ranks 20th among the States in area, 14th in population, and 23d in density, with an average of 53.4 persons per square mile. The largest city and capital is Atlanta with 302,288 inhabitants. There are 159 counties and 19 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education, there were 730,894 pupils enrolled in the State School System during the school year 1937-38. Of this total, 619,315 were enrolled in kindergartens and elementary schools and 111,579 in secondary schools, 265,823 were in separate Negro schools. The instructional staff comprised 22,773 persons, who received an annual average salary of \$715 (U.S. average: \$1,374); 3,949 or 17.4 per cent were men. Expenditures for all public schools in 1937-38 were \$24,333,302, making a total cost per capita of \$7.81 (U.S. average: \$17.15). School buildings (1936 count) numbered 6,149; there were 2,632 one-room, one-teacher schools (1938). For higher education, see under *Georgia* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 11,741, of which 7,504 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 513,097; 412,439 were private and commercial automobiles, 2,982 busses, and 87,182 trucks and tractor trucks. Gross motor-fuel consumption was 400,296,000 gal. Net motor-fuel tax receipts were \$22,841,000, the rate being six cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$2,768,000.

Railways of all classes extended 6,335 miles (Dec. 31, 1939) 2.69 per cent of the total mileage in the United States. Class I steam railways (4,284 miles) reported 8,331,159 tons of revenue freight originating in Georgia in 1940 and 12,038,495 tons ending in Georgia. There are 49 airports and landing fields in the State (20 lighted fields) and two seaplane bases. On July 1, 1941, according to the Civil Aeronautics Authority, there were 330 civil aircraft in the State and 1,325 airline transport, commercial, and private pilots (1,013 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 10,414,100, as compared with 10,970,100 acres in 1940. According to the latest census, there are 216,033 farms, valued at \$480,344,531, averaging 109.6 acres each. Farm population numbered 1,369,719 or 43.8 per cent of the total. Leading crops with production were: Cotton lint, \$51,480,000, 624,000 bales; corn, \$29,400,000, 42,000,000 bu.; peanuts, \$24,194,000, 525,950,000 lb.; cottonseed, \$13,288,000, 278,000 tons, tobacco, \$11,408,000, 54,655,000 lb.; hay, \$9,207,000, 790,000 tons; velvetbeans, \$7,322,000, 505,000 tons; sweetpotatoes, \$6,520,000, 7,245,000 bu

Manufacturing. According to the latest census (covering the year 1939) the total value of manufactured products was \$677,402,657. For details, see 1940 YEAR BOOK.

Mineral Production. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$14,633,361 or .35 per cent of the United States total, raw clay and stone are the leading items (by value).

Trade. According to the 1940 census there were 3,032 wholesale establishments in Georgia, employing 24,501 persons, reporting net sales for 1939 of \$806,238,000 and annual pay roll of \$34,899,000. There were 32,870 retail stores with 78,947 employees, reporting sales of \$624,765,000 and pay roll of \$58,874,000. Service establishments numbered 10,098, employing 23,440 persons for \$14,382,000 per year, and reporting a business volume amounting to \$45,256,000. The leading business center of the State is Atlanta which reported wholesale sales of \$465,115,000, retail sales of \$172,279,000, and \$16,683,000 receipts for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Georgia was \$37,832,000. Under the Social Security program, financed by Federal funds matching State grants, 51,742 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$8.33 (U.S. average pension, \$21.08); 11,788 dependent children in 4,749 families received average monthly payments of \$21.95 per family (U.S. average, \$32.73); and 1,576 blind persons received \$10.84 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 5,880 and received \$6.52 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 6,684 (\$443,000); NYA student work program, 11,987 (\$71,000); NYA out-of-school work program, 12,021 (\$232,000); WPA, 30,061 (\$1,491,000); other Federal emergency projects, 140 (\$11,000); regular Federal construction projects, 13,048 (\$1,329,000). The Farm Security Administration certified subsistence payments totaling \$69,000 for the month to 1,241 cases.

Legislation. The General Assembly convenes in

regular session on the second Monday of January in odd years. It is composed of 52 Senators and 205 Representatives, all of whom are Democrats. The following is a summary of enactments of general interest signed into law by Governor Talmadge during the 1941 session of the Georgia Legislature.

General House Bills: No. 1—Fixing the powers of the Governors in administering appropriations acts; providing for ascertainment of surplus in appropriations and allocations and allocating above quarterly approved budgets, and providing for the disposition thereof and the appropriation of such surpluses *No. 21*—To prohibit and regulate the solicitation of votes in counties with a population of 200,000 or more *No. 34*—To require the payment of fees of clerks and sheriffs of the Superior Court in divorce cases. *No. 157*—Providing for auditing of claims against the Highway Department and approval of such claims for payment by the highway chairman, the governor and the state auditor *No. 20*—Amending election laws so as to provide for a secret ballot *No. 379*—Amending the intangibles classifications of the Tax Act to classify certain properties for taxation *No. 380*—Amending income tax laws relating to personal exemptions and credits *No. 599*—Providing for the survival of suits commenced by or against public officers in their official capacity in favor of or against their successors in office in the event of death, removal, resignation or expiration of the terms of such officers *No. 46*—Providing for establishment of Eastern Standard time throughout Georgia. **General Senate Bills: No. 1**—Amending act creating Public Safety Department to provide family drivers' licenses. *No. 2*—Abolishing old Highway Board and terminating terms of office of its members, creating a new board and providing for appointment of new members *No. 3*—Providing for suspension of the State Treasurer and the Comptroller General and for the appointment of suitable persons to discharge duties of the office in case of such suspension *No. 4*—Abolishing State Contractors Licensing Board *No. 6*—To limit issuance of paroles by requiring the evidence of satisfactory prison records and by requiring the approval of the Governor of such paroles before prisoners are released *No. 7*—To create the office of the state superintendent of prison farms and define its duties, fix compensation, etc. and to abolish the State Board of Penal Corrections. *No. 8*—Abolishing Georgia Radio Commission *No. 9*—Creating a new State Housing Authority *No. 12*—Reducing the salary of the Secretary of State from \$6,000 to \$5,000. *No. 13*—Reducing the salary of the State Treasurer from \$6,000 to \$5,000. *No. 14*—Reducing the salary of the Comptroller General from \$6,000 to \$5,000. *No. 15*—Reducing salary of state school superintendent from \$6,000 to \$5,000. *No. 16*—To repeal an act providing for the confirmation by the Senate of all appointees of the Governor for public office. *No. 21*—Requiring registration of guests under their true names at tourist camps and like places and providing penalties for violators. *No. 22*—To repeal the act providing for a general election to be held in June of odd years. *No. 23*—Providing capital punishment for grave desecrators. *No. 42*—Authorizing the commissioner of agriculture to exercise the powers and duties of the state veterinarian. *No. 43*—Abolishing office of state veterinarian. *No. 44*—To clarify terms and provisions of the Unemployment Compensation Law. *No. 49*—To amend law providing for consolidation of school districts by requiring the holding of elections to pass on such consolidations. *No. 55*—To allow members of group hospital associations to choose the hospitals to which they are sent. *No. 59*—To provide for registration of buyers of explosives with county ordinaries. *No. 124*—Fixing salaries as the sole compensation of tax collectors, receivers and tax commissioners in counties of populations of 83,000 or more. *No. 125*—To amend an act changing the classes and amounts of commissions allowed to tax receivers and tax collectors of state and city taxes

Resolutions signed by the Governor include *S. R. 10*—Proposal for ratification of constitutional amendment fixing term of office of state school superintendent at four years. *S. R. 13*—To authorize and direct surveyor general of Georgia to survey the state line between Georgia and North Carolina and Georgia and Tennessee. *H. R. 92A*—Proposal for ratification of a constitutional amendment to fix at four years the term of the governor and other constitutional officers. *No. 29*—To amend the act creating the Fulton County Planning Commission. *No. 31*—To provide that Fulton County may not levy a pauper's tax exceeding 1/4 mills except on the recommendation by two-thirds vote of two successive grand juries.

Seventy proposals were submitted to the voters of the State in 1941, out of a total of only 83 proposals submitted in all the States of the Union. It was the longest list voted upon by any State in recent years. Only one measure, regarding a change from biennial to annual legislative sessions, was re-

jected; this was the only measure which drew a substantial expression of public opinion in an off election year. Of the 70 proposals, 62 related to specifically-named subdivisions, most of them permitting incurrence, funding, or refunding of debt. Measures of general interest were: increase of the governor's term from two to four years, increase in the term of the State School Superintendent and other officers; increase in the jurisdiction of Justices' courts; and tax exemption for rural electrification projects. Georgia officials were authorized to advertise the State's resources, facilities, and assets; and counties and municipalities were allowed to contract with other public agencies for the hospitalization of the indigent sick.

Finances. Total tax collections in Georgia for the fiscal year ending in June, 1941, were \$59,973,000 (1940: \$52,935,000). Total sales taxes amounted to \$31,859,000, including motor fuel, \$24,621,000, alcoholic beverage, \$4,072,000. Taxes on specific businesses ran to \$3,149,000, general and selective property, \$4,705,000, unemployment compensation, \$9,046,000. The net income taxes were \$7,389,000. Cost payments for the operation of general government totaled \$38,956,000 in 1939, the latest year available. (Revenues for the general government for that year were \$69,271,000.) Cost of operation per capita was \$12.59. Total gross debt outstanding in 1941 was \$28,667,000, as compared with \$12,592,000 in 1932.

Officers and Judiciary. The Governor is Eugene Tal- madge (Dem.), inaugurated in January, 1941, for his third two-year term; Secretary of State, John B. Wilson; Attorney General, Ellis G. Arnall; State Treasurer, George B. Hamilton; State Auditor, B. E. Thrasher, Jr.; Comptroller General, Homer C. Parker. Chief Justice of the Georgia Supreme Court is Charles S. Reid; there are five associate members elected by popular vote for six-year terms.

See CONSUMERS' COOPERATIVES; EDUCATION under *Political Interference*; HURRICANES.

GEORGIAN SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

GERMAN-AMERICAN BUND. See FASCISM.

GERMAN LITERATURE. With the war progressing it becomes increasingly difficult to trace German literature inside of Nazi Germany. The few literary magazines which still could be published have not reached this country. But presumably other than technical reasons may account for the difficulty, for thorough inquiry with people who should know and who have lately arrived from Germany or Europe reveals that the articulate voice of Germany seems to be mute for the time being and that there is nothing else offered in print than propagandist literature or books of third-rate authors. The only books mentioned are such as Georg von Hase's *Die Kriegs-Marine erobert Norwegens Fjorde* (The war fleet captures the Fjords of Norway), or Rolf G. Haebler's *Wie unsere Waffen wurden* (How our arms originated). The only cultural item that could be found was the foundation of a Paper Museum in Duren, with a collection of 28,000 different sorts of paper, the oldest dating from 1329.

In contrast to German conditions Switzerland, the only free German-speaking country, developed great literary activity during 1941. (See SWISS LITERATURE.) There has been an interesting publication of the autobiographical notes of Nietzsche's friend Franz Overbeck, edited by A. Vischer. The German edition of Hermann Rauschnig's *Conservative Revolution* was published in special editions

in Switzerland and in this country. Werner Richter wrote a biography about Crown Prince Rudolph von Oesterreich. Herbert Tauber gives a clear and subtle analysis of Franz Kafka's most important works.

As always during recent years a great number of American authors have been translated into German. We find Louis Bromfield, Pearl S. Buck, James Cain, Willa Cather, Francis Griswold, Hemingway's *For Whom the Bell Tolls*, published in Stockholm, Kenneth Robert's *Oliver Wiswell*, and Steinbeck's *Grapes of Wrath*.

German literature in exile, of course, has lost its last hold on the continent. There still exists the Bermann-Fischer Verlag in Stockholm which published, besides translations of Asch and Hemingway, Vicki Baum's last novel, *Die grosse Pause* (The Great Pause), backstage life at the Metropolitan Opera, the main character a famous woman singer; a small volume of selected verses by Richard Beer-Hofmann, the famous Austrian poet; a biography of Franz Schubert, by Annette Kolb; Stefan Zweig's *Ein Blick auf Brasilien*, past and present economical and political history of Brazil described by the famous author who is now living in that country; also the two most important publications of the year by exiled authors, Thomas Mann's *Die vertauschten Kopfe*, (known in America as *The Transposed Heads*), a most charming and meaningful love story on the background of an old Indian legend, and Franz Werfel's *Das Lied der Bernadette*, which will very soon be published in America under the title *The Song of Bernadette*, the story of the Saint from Lourdes.

Another short novel by Werfel, *Eine blass-blaue Frauen handschrift*, (The pale blue handwriting of a woman) has been published by a new German publishing house in Buenos Aires. The same publisher has printed a short novel by Paul Zech, a formerly well known German poet, *Ich suchte Schmied* (I was looking for Schmied), the adventures of a fugitive from Europe in South America. The literary agent, Barthold Fles, in New York became the publisher of two fine volumes of German poetry: Berthold Viertel's *Fürchte Dich nicht* (Don't be afraid), and the last poems of Max Hermann-Neisse, one of the most gifted and most sincere of German poets of this generation, who recently died in London.

Comparatively few was the number of books published by German writers in original American editions during 1941. There have been a few important books on the exciting adventures experienced by exiled authors during the fall of France: Lion Feuchtwanger's *The Devil in France*, and two German-Hungarian writers: Artur Koestler, *Scum of the Earth*, and Hans Habe, *A Thousand Shall Fall*. A similar report by Heinrich Mann has not yet been published. Curt Riess edited the book, *I was a Nazi Flier*, and wrote another revealing book, *Total Espionage*. Egon Erwin Kisch, now in Mexico, published the recollections on his life as a reporter, and the famous conductor Bruno Walter, a newly revised edition of his biography of Gustav Mahler.

German authors are strewn all over the country, especially in California, where Thomas Mann is working on the fourth volume of his Joseph Epic. The famous dramatist, Bert Brecht, arrived via Siberia and Japan from Finland. Martin Gumpert has given, in *First Papers*, an account of the American experiences of this generation of refugees. Leo Lania has published a volume of political recollections.

The magazine *Decision* has tried again during

1941 to be a refuge for European literature in exile and to create a new unity with young American literature. The magazine *Free World* tried to unite the different political groups in exile, partly German, and in Mexico a new German political magazine, *Das Freie Deutschland* started its career, editor Bruno Frei.

In New York the former German publishers Gottfried Bermann-Fischer and Friedrich Landshoff founded the new publishing house, G. B. Fischer, which probably will become the American voice for a number of former German authors. Books are in preparation by Leopold Schwarzschild, Josef Bornstein, Valeriu Marcu, Paul Stephan, Baerensprung, Klaus Mann.

There have not been too many dramatists among the exiled writers from Germany. A play by Carl Zuckmayer and Fritz Kortner on the fall of France did not reach Broadway, and the former German director, Piscator, gave at the "New School for Social Research" the old play *Die Verbrecher* (The Criminals), by Ferdinand Bruckner in a new version. Dr. Alfred Loewenberg's large collection of German plays was acquired by Johns Hopkins University, and the catalogue of 3,000 titles, edited by Dr. Ernst Feise, appeared under the title *Fifty years of German Drama*.

MARTIN GUMPERT.

GERMANY. A former Federal republic of Europe, transformed into a centralized, totalitarian state by the National Socialist revolution commencing in 1933. Capital, Berlin.

Area and Population The area and population of Germany and its political subdivisions at the census of May 17, 1939 (final returns), with comparative figures for the census of 1933, are shown in the accompanying table.

GERMANY: AREA AND POPULATION BY POLITICAL SUBDIVISIONS

Subdivisions	Area sq. miles	Population	
		June 16, 1933	May 17, 1939
Prussia ^a	113,012	39,934,011	41,655,252
Bavaria	29,336	7,681,584	8,222,982
Württemberg	7,530	2,896,234	2,896,920
Mecklenburg ^b	6,197	805,213	900,413
Baden	5,817	2,411,462	2,502,442
Saxony	5,785	5,196,652	5,231,739
Thuringia	4,540	1,659,510	1,743,624
Hesse	2,909	1,429,048	1,469,215
Oldenburg	2,480	573,853	577,648
Brunswick	1,417	512,989	583,338
Anhalt	893	304,415	451,422
Saarland	738	812,030	842,454
Lippe	469	175,538	187,220
Hamburg	160	1,218,447	1,711,877
Schaumburg-Lippe	131	49,955	63,195
Bremen	99	371,558	450,084
Total	181,688	66,030,491	69,459,825
Austria ^c	34,055		6,972,269
Sudetenland ^d	8,718		2,943,187
German Reich	224,461		79,375,281

^a Excluding Saarland and including Waldeck and Lüneburg. ^b Excluding Saarland. ^c Annexed Mar. 13, 1938. ^d Annexed Oct. 1, 1938.

The other table shows the area and population of territories formally incorporated into the Reich but not included in the May 17, 1939, census. It does not include territories under German protection, such as Bohemia-Moravia and the Government General of Poland, or the occupied countries (q.v.). About 500,000 German-speaking inhabitants of the protectorates and occupied countries were repatriated to the Reich during 1940. For the most part, they were settled in the provinces annexed from Poland, displacing an equal or greater number of Poles who were forced to migrate to the Government General of Poland.

OTHER AREAS INCORPORATED INTO THE REICH

	Date of annexation	Area sq miles	Population
Memel	Mar. 22, 1939	976	153,000 ^a
German Poland	Oct. 8, 1939	35,512	9,627,000 ^b
Danzig	Sept. 1, 1939	754	403,000 ^b
Eupen Malmédy Moresnet	May 19, 1940	386	62,000 ^b
Alsace-Lorraine	Nov-Dec, 1940	5,005	1,915,627 ^c
Total ^d		42,257	12,007,627

^a Estimate. ^b 1939. ^c 1936. ^d Excluding a part of Yugoslavia along the Austrian frontier annexed in 1941.

According to the foregoing tables, the area of Germany proper on Dec. 31, 1940, was about 266,718 square miles. The total population was approximately 91,382,908.

Living births in Germany in 1939 numbered 1,633,078, including Austria, the Sudetenland, Memel, and Danzig, as compared with 1,506,340 in 1938. Deaths totaled 1,009,290 as against 950,144 in 1938. The birth rate for Germany, including the Saar but excluding Austria and subsequent annexations, was 20.3 per 1,000, death rate, 12.3 per 1,000.

Populations of the chief cities at the May 17, 1939, census were: Berlin, 4,332,242; Vienna, 1,918,462; Hamburg, 1,682,220; Munich, 828,325; Cologne, 768,426; Leipzig, 701,606; Essen, 659,871; Dresden, 625,174; Breslau, 615,006; Frankfurt-on-Main, 546,649; Düsseldorf, 539,905; Dortmund, 537,000; Hanover, 472,527; Stuttgart, 459,538; Duisburg-Hamborn, 431,256; Nurnberg, 430,851; Wuppertal, 398,099; Königsberg, 368,433; Bremen, 342,113; Chemnitz, 334,563; Magdeburg, 334,358; Gelsenkirchen, 313,003; Bochum, 303,288; Mannheim, 283,801; Kiel, 272,311; Stettin, 268,915; Halle-on-Saale, 220,364; Kassel, 217,085; Graz, 210,175; Brunswick, 201,306. According to the census, the Jewish population was 330,892 in Germany, including Austria and the Sudetenland. This did not include half-Jews, of whom there were 72,733.

Education. Primary education is compulsory and there is little illiteracy. Excluding Austria and the Sudetenland, there were 50,592 elementary schools and 7,503,195 pupils in 1939, as compared with 51,118 schools and 7,596,000 students in 1938. In Austria there were 4,721 schools and 657,000 pupils; in the Sudetenland, 2,957 schools and 274,000 pupils. Other school enrollment (in 1937-38) was: Intermediate, 272,365; "gymnasien" and "realschulen," 370,985; universities and advanced schools, 69,981 (universities, 45,989; advanced technical schools, 9,554; others, 14,438). There are three new special colleges for the training of Nazi political leaders. At the beginning of 1941, a faculty for the study of foreign countries and languages was opened at the University of Berlin. Of the 3,300 foreign students enrolled in German universities in 1941, 1,500 came from the countries of Southern Europe, 470 from Latin America, 100 from China, and 50 from Japan. The number of students in theological faculties of the universities declined from the pre-war total of about 6,000 to 307 in the second term of 1940.

Religion. According to the 1933 census, 62.7 per cent of the German people were Protestants affiliated with the various Evangelical Churches, 32.5 per cent were Roman Catholics, 0.7 per cent were Jews, and 4.0 per cent professed other religious faiths. Beginning in 1934 the Hitler Government undertook to unite the Evangelical churches under a bishop appointed by the Reichsfuehrer, and made other efforts to coordinate the policies of the Evan-

gical and Catholic churches with the policies of the Nazi party and state. This provoked a serious conflict (see below under *History*; also preceding *YEAR BOOKS* for 1933-40). The Government also sponsored a neo-pagan German National Church based on doctrines of the official Nazi party philosopher, Alfred Rosenberg, but it gained relatively few adherents. According to statistics issued by the Reich Ministry of Church Affairs in 1941, there were 45,000 Evangelical pastors and other church functionaries excluding Austria and the Sudetenland, 9,300 Evangelical church establishments with 72,000 employees, 33,000 Roman Catholic priests, and 8,650 Catholic religious centers with over 100,000 monks and nuns. The number of school children belonging to Evangelical churches was 4,353,435; to the Catholic Church, 2,803,138.

Production. Excluding Austria and the Sudetenland, the 1939 census showed 40.3 per cent of the population dependent upon industry, 18 per cent upon agriculture (39.9 per cent in 1882), 16.2 per cent upon independent business and commercial enterprises (38.5 per cent in 1882), and 13 per cent upon pensions or independent incomes. The national income rose from an estimated 56,514,000,000 reichsmarks in 1933 to 100,000,000,000 in 1941 (including state levies of all descriptions, amounting to 43,600,000,000 reichsmarks in 1939).

Agriculture. The Reich (including Austria and the Sudetenland) had 55,302,000 acres of arable land in 1939, 27,601,000 in meadows and pastures; 2,470,000 in trees, shrubs, and orchards; and 42,032,000 acres of forests. The gross value of agricultural production in the harvest year 1938-39 was 14,050,000,000 marks, representing an increase of 7 per cent over 1937-38. Milk accounted for 23.5 per cent of the total. The potato crop for 1940 was estimated at 58,900,000 tons for Greater Germany, including Austria and the Sudetenland but excluding territory subsequently annexed by the Reich. The sugar-beet crop was said to total 18,400,000 tons, or double the pre-Hitler average. Yields of chief cereals in 1939 were (in metric tons): Wheat, 5,613,500; barley, 4,261,800; rye, 9,454,800; oats, 6,867,700, and corn, 379,600 (1938). In 1940 Germany devoted 918,840 acres to rapeseed, flax, and hemp. Meat production in 1938 totaled 3,676,800 metric tons, of which hogs accounted for 2,305,600 metric tons. The livestock census of December, 1939, showed 19,900,000 cattle, 25,200,000 swine, 4,900,000 sheep, 3,442,741 horses (1938), and 2,300,000 goats. Forests, covering 42,796,000 acres, were an important adjunct of the German economy. German sea fisheries in 1938 caught 722,000 metric tons of fish valued at 104,200,000 reichsmarks.

Mining and Manufacturing. The net value of industrial production in some of the larger categories was divided as follows in 1938: Shipbuilding, 273,500,000 marks, metal, 559,500,000 marks; leatherware, 106,300,000 marks; motor vehicles, 636,500,000 marks. The 1938 output of minerals and metals in metric tons was: Coal, 186,179,000; lignite, 232,000,000; iron ore, 3,100,000; lead, 185,200; copper (smelter), 66,000 (1939); pig iron, 18,595,000; steel, 23,208,000; aluminum (smelter), 3,000 (1939); cadmium, 432; zinc, 212,300 (1939); crude petroleum, 647,000 (1939). Rayon production was 66,500 metric tons; wood pulp, 2,544,000. Pig-iron production in Germany and German Poland during 1939 was estimated provisionally at 22,850,000 tons; steel, 30,950,000 tons; aluminum, 185,000 tons. Output of electric energy totaled 5,500,000,000 kilowatt-hours in 1938. Manufacture of rubber and other synthetic raw materials expanded rapidly

after 1933 as a result of the government's drive for economic self-sufficiency.

Foreign Trade. Imports for consumption in 1938 were valued at 5,449,000,000 marks (5,468,000,000 in 1937) and exports of German products at 5,256,000,000 marks (5,911,000,000 in 1937). For the first seven months of 1939, merchandise imports totaled 3,194,000,000 marks; exports, 3,314,000,000 marks. No trade statistics have been made public by the German Government since Aug. 1, 1939. For distribution of trade among countries, see 1939 *YEAR BOOK*, p. 315. Also see *TRADE, FOREIGN*.

Finance. Publication of a regular budget was discontinued in 1934. According to figures issued by the Assistant Minister of Finance in Berlin in September, 1941, the Reich's military expenditure during the first two years of the European War was 100 billion reichsmarks, as compared with the 90 billion reichsmarks spent on armaments during the period from January, 1933, to Sept. 1, 1939. Receipts from all sources other than loans were estimated at about 40 billion marks for the fiscal year ended Mar. 31, 1942. This sum included about 31 billion marks from taxes, 5 billion from other normal revenues, 1.4 billion from the German communes, and 2.6 billion contributed by Bohemia-Moravia and occupied territories (excluding France). Estimated expenditures for nonmilitary purposes in 1941-42 totaled 20 billion marks. Combined military and nonmilitary expenditures were estimated at 29,288,000,000 reichsmarks in 1938-39, 44,963,000,000 in 1939-40, more than 68,000,000,000 in 1940-41, and about 78,400,000,000 in 1941-42.

The disclosed public debt rose from 37,200,000,000 reichsmarks at the outbreak of the war to approximately 107,000,000,000 on Sept. 1, 1941. The nominal average exchange rate of the reichsmark was \$0.4016 in 1938, \$0.4006 in 1939, \$0.4002 in 1940. See *History*.

Transportation. The total railway mileage in Germany and German-occupied countries was 109,904 (excluding occupied France) on Dec. 31, 1940, compared with 86,000 miles on Oct. 1, 1939 (about 42,300 miles in Germany proper). Partly due to the taking over of railways in Belgium, Luxemburg, and Alsace-Lorraine and of former privately-owned railways in Germany, estimated receipts of the German State Railways rose from 5,800,000,000 reichsmarks in 1939 to 7,600,000,000 in 1940. Partly through territorial annexations, the German highway network increased from 132,094 on Mar. 31, 1937, to 263,267 miles in 1940, including over 2,000 miles of express highways. The length of German air services in operation on Oct. 22, 1940, was officially reported as 7,457 route miles. The Deutsche Lufthansa A.G. was reported in August, 1941, to be operating about two-fifths of the lines in service prior to the war. It reported the following traffic statistics for 1940: Distance flown, 5,000,000 kilometers; passengers, 95,000; baggage and parcels, 440 tons; freight, 900 tons; mails, 1,000 tons.

Inland waterways extend more than 7,000 miles (canals, 1,450 miles). Further extensions to the canal system were under construction in 1941, including the Oder-Danube and Rhine-Main-Danube canals. The final link of the great Midland Canal, under construction since 1906, was completed in 1940. It connects the Oder, Elbe, and Weser with the Rhine and many smaller rivers. As of June 30, 1939, the German merchant marine comprised 2,466 ships of 4,492,708 gross tons.

Government. Under the Enabling Act of Mar. 24, 1933, giving the cabinet unrestricted powers to

legislate by decree, dictatorial powers were assumed by Adolf Hitler in his dual capacity as Chancellor (appointed Jan. 30, 1933) and head of the National Socialist (Nazi) party, the only legal political organization. Upon the death of President von Hindenburg, Aug. 2, 1934, Hitler assumed the functions of both Chancellor and President under the title of Leader (Fuehrer) and Chancellor (Reichskanzler). On Oct. 16, 1934, it was officially announced that Hitler would occupy both offices for life. Rights of the former Federal States were abolished by the decree of Feb. 1, 1934. Between 1933 and 1941, the Nazi party progressively brought under its control not only the government and the army but virtually all departments of political, cultural, social, and economic life (see preceding YEAR BOOKS). The Reichstag of 855 members was elected Mar. 29, 1936, and Apr. 10 and Dec. 4, 1938, from nominees selected by the Nazi party. It is a purely advisory body, meeting infrequently at the call of the Fuehrer.

The cabinet was composed as follows at the end of 1941, with dates of appointment in parentheses: Fuehrer, Chancellor, and Minister of Defense, Adolf Hitler; Interior, Dr. Wilhelm Frick (Jan. 30, 1933); Foreign Affairs, Joachim von Ribbentrop (Feb. 4, 1938); Finance, Count Ludwig Schwerin von Krosigk (Jan. 30, 1933); Food and Agriculture, Dr. Walther Darré (Jan. 30, 1933); Economic Affairs, Dr. Walther Funk (Jan. 15, 1938); Labor, Franz Seldte (Jan. 30, 1933); Posts, Dr. Wilhelm Ohnesorge (Feb. 2, 1937); Transport, Dr. Julius Heinrich Dorpmueller (Feb. 2, 1937); Aviation, and Commissioner for the Four-Year-Plan, Field Marshal Hermann Goering (Jan. 30, 1933); Justice, Franz Schlegelberger (Jan. 31, 1941); Science, Education, and Public Instruction, Dr. Bernhard Rust (Apr. 30, 1934); Church Affairs, Hanns Kerrl (July 19, 1935); National Enlightenment and Propaganda, Dr. Joseph Goebbels (Jan. 30, 1933); Munitions, Dr. Fritz Todt (Mar. 20, 1940). Also Ministers without Portfolio Rudolf Hess (Jan. 30, 1933), Deputy Leader of the Nazi party (imprisoned in Great Britain); Dr. Hanns Frank (Dec. 19, 1934), chief of the Government General of Poland; Dr. Heinrich Lammers (Nov. 26, 1937), Chief of the Reich Chancery; Dr. Hjalmar Schacht (Nov. 26, 1937), former head of the Reichsbank (Nov. 26, 1937); Dr. Otto Meissner (Dec. 2, 1937), and Baron Konstantin von Neurath (Feb. 4, 1938), former Protector of Bohemia and Moravia.

On Aug. 30, 1939, Hitler named an Inner Council of Defense consisting of Marshal Goering (chairman), Rudolf Hess, Ministers Frick, Funk, and Lammers, and Gen. Wilhelm Keitel, chief of the general staff. The Council was authorized, in the event of Hitler's absence, to issue decrees and ordinances without his signature. In a speech to the Reichstag on Sept. 1, 1939, Hitler designated Marshal Goering as his successor "if anything should happen to me in this struggle." He named Rudolf Hess as Goering's successor.

HISTORY

Germany in Difficulty. German military fortunes during 1941 repeated in general outline their course in 1940. The first half of the year brought sensational victories that consolidated Nazi control over continental Europe and aroused bright prospects of an early and overwhelming triumph. The latter half of the year was marked by serious and costly reverses—far more significant than those of 1940—that dummed all hope of early victory and forced the German people to face the bitter prospect of ultimate defeat.

Bulgaria, Finland, Hungary, Rumania, and Japan entered the war on the side of the Reich. But their assistance was more than offset by the addition of the Soviet Union and the United States to the anti-German coalition. With the aid of the Japanese navy, Hitler at the end of 1941 was engaged in a desperate effort to break out of the confines of Europe and seize strategic naval and air bases in the Far East and Africa. The object was to nullify the Allied sea, land, and air blockade of the continent before the full weight of the United States could become effective in the world conflict.

Hitler's War Aims. The repulse of the German air assault upon Great Britain in the autumn of 1940 and subsequent British and Greek victories over the Italians in North Africa and Albania presented Hitler at the beginning of 1941 with several immediate military-political tasks. He had to break the British blockade of the continent either by an invasion or a more effective counter-blockade of the British Isles. He had to rescue the Fascist regime in Italy from threatened collapse, induced by Italian military reverses, and eradicate British and other anti-Axis influences in the Balkans. And he had to guard against the danger of attack from Russia while organizing Europe against the political, economic, and military consequences of growing American aid to Britain.

The Fuehrer showed no doubt as to Germany's ability to accomplish these objectives. On January 30, the eighth anniversary of his seizure of power, he spoke at the Sportpalast in Berlin, confidently predicting "that 1941 will be the crucial year of a great new order in Europe." "The world," he continued, "shall open up for everyone. Privileges for individuals, the tyranny of certain nations and their financial rulers shall fall." He said the number of Nazi land divisions had been "tremendously increased" and "equipped as never before in German history." "At sea," he said, "submarine warfare will begin in the spring, and you will find we have not been idle. The Air Force will introduce itself similarly. Our whole army will force a decision one way or another."

Conquest of the Balkans. In carrying out his program, Hitler turned his attention first of all to the rescue of Fascist Italy and the establishment of German control in the Balkans. Early in January German air and land forces that had been sent to Italy's aid in December, 1940, began to challenge British naval and air supremacy in the Mediterranean and to strengthen the retreating Italian forces in Libya. The terms and extent of further German assistance in extricating Italy from its military dilemma in Albania were discussed at a secret conference between Hitler and Mussolini on January 20. Both leaders were accompanied by their Foreign Ministers and high military officials. At the same time a German economic mission of 35 experts, headed by Dr. Karl Clodius, arrived in Rome. Arrangements were made for Germany to supply Italy with urgently needed raw materials in return for foodstuffs and the services of Italian laborers in German factories and fields.

An uprising in January of the Iron Guard in German-dominated Rumania (q.v.) delayed Hitler's plans somewhat. But by the beginning of February he was ready to bring to a rapid conclusion the negotiations begun in 1940 for the adherence of Bulgaria and Yugoslavia to the Rome-Berlin-Toyko alliance. By combined political and economic pressure and military threats, Bulgaria was brought formally into the Axis camp on March 1. On the following day German troops based in Rumania began to occupy the Bulgar kingdom.

With his armies poised along the Bulgarian frontiers of Turkey, Greece, and Yugoslavia, Hitler was now in a position to bring extreme pressure upon Turkey to remain neutral, upon Greece to end hostilities with Italy, and upon Yugoslavia to adhere to the Axis and join Germany's "new order" in Europe. The pressure upon Turkey was successful; despite its alliances and sympathies with both Greece and Britain, Turkey remained passive during the subsequent campaigns in Greece and Yugoslavia.

Bolstered by a pledge of British support, the Greeks refused to halt their successful offensive against the Italian armies in Albania. The Yugoslav Regents and Government proved less resolute. In the hope of avoiding extinction of their country's independence, they signed the Tripartite Pact, with some reservations, on March 25. This was followed on March 27 by a *coup d'état* in Belgrade, and the establishment with almost unanimous popular support of a Yugoslav Government which in effect repudiated the kingdom's adherence to the Tripartite Pact. On the same day Hitler issued secret orders to attack Yugoslavia and Greece.

The assault was launched at dawn on April 6, with the cooperation of Italian forces. Within 12 days the Yugoslav armies were forced to capitulate. Within another 12 days Greek resistance was crushed and the remnants of a battered British expeditionary force of some 70,000 men were driven from the Greek mainland. Meanwhile German armored forces had landed in Libya. They seized upon the opportunity presented by the diversion of British troops to Greece to regain all of the ground lost by the Italians in the British offensive of December-January. Beginning May 20 the Germans attacked the strategically important Greek island of Crete by air, and in another 12 days they had ended all effective British and Greek resistance.

These stunning victories ended Allied hopes of opening up a military front in the Balkans. They placed the economic resources of Greece and Yugoslavia at the disposal of the Axis, greatly weakened the British naval position in the Mediterranean, exposed the naval base at Alexandria and the Suez Canal to Axis air attacks, and revived the danger of an invasion of Egypt from Libya. They also endangered the British position in Asia Minor, virtually isolated Turkey from Britain, and greatly increased the pressure upon that country to throw in its lot with the Axis.

Intrigues in Iraq and Syria. It was generally expected that Hitler would move next to cut British Empire communications at the Suez Canal by a pincer movement directed from Libya on the one side and from Syria on the other. The oil fields of Iraq were another tempting objective seemingly within easy reach of the victorious Nazi armies.

The groundwork for a German invasion of Asia Minor had been laid through negotiations with the Vichy Government of France and through infiltration by Nazi agents into Syria and Iraq. On April 4 a *coup d'état* brought a pro-Axis Government to power in Iraq. On May 2, after British defeats in Greece and Libya, Iraqi troops attacked the small British forces near Baghdad and at Basra. German airmen and technicians were sent to assist Rashid Ali Beg Gailani's Iraqi forces through the connivance of Gen. Henri Dentz, the French High Commissioner in Syria. With the cooperation of Pro-British elements in Iraq and Trans-Jordan, the British were able to drive out Rashid Ali and restore the pro-British Regent to power in Iraq (q.v.) just as the Germans completed the occupation of Crete.

Meanwhile the "peaceful penetration" of Axis

agents into Syria had proceeded with the acquiescence of the Vichy authorities. German detachments and technicians were at Syrian airfields. German "tourists" were actively at work throughout the mandated territory preparing for Axis military occupation by way of Crete and the Italian Aegean Islands. To forestall this occupation the British and Free French forces on June 8 launched a general attack upon the Vichy forces in Syria, which ended with the capitulation of General Dentz on July 11.

To the surprise of most observers, Hitler did not follow up his advantages in Syria. The German troops and planes there were withdrawn during the fighting, although the Axis afforded France every facility for sending French reinforcements to Syria. From the German viewpoint, this had the advantage of widening the breach between Britain and the Vichy Government, thus forcing France into closer collaboration with the Reich. But it permitted the Allies to seize control of Syria, block German designs in Asia Minor, and reinforce Turkish resistance to German pressure.

Attack upon Russia. The reason for Hitler's policy in Syria became obvious on June 22 when German armies launched a sudden attack upon Russia along the entire front from the Arctic Ocean to the Black Sea. The crucial decision to attempt to knock out the Soviet Union before proceeding to attack the British at Suez or in their island stronghold apparently was reached by Hitler on the advice of his generals and only after a struggle among the Nazi leaders. His primary objectives were, first, to eliminate the danger that the Red Army might strike Germany in the rear just as the war against Britain was reaching its decisive stage. Secondly, he wanted to secure control of Russian agricultural and mineral resources, especially the oil fields of the Caucasus, in order to nullify the British blockade and defy both Britain and the United States in a long war.

Other important factors impelled Hitler to take his vital decision. British air power was rapidly increasing, as indicated by the growing severity of attacks upon German cities. The other defenses against a German invasion of the British Isles had been immensely strengthened. The German submarine and air offensive was proving unequal to the task of cutting British sea communications. Also the United States was increasing its aid to Britain and drawing steadily nearer to participation in a "shooting war" with Germany. According to a statement issued by Hitler to the German people on June 22, his military commanders advised him that such large German forces were needed to protect Germany's borders against Russia "that radical conclusion of the war in the west, particularly as regards aircraft, could no longer be vouchsafed."

Hitler's statement, and a simultaneous review of German-Russian relations issued by Foreign Minister von Ribbentrop, alleged that the Russians had overstepped the provisions of the Nazi-Soviet accord of 1939 in annexing the Baltic States, Bessarabia and Northern Bukovina, and in attacking Finland. They accused Moscow of carrying on underground Communist agitation within German Poland and other German-dominated areas, again in violation of the 1939 pact; of hostile actions toward Germany in the Balkans, particularly in Bulgaria and Yugoslavia; and of secretly collaborating with Britain against the Reich. It was charged that the Russians had failed to deliver the quantities of industrial raw materials, oil products, and foodstuffs provided for in the Soviet-German trade agreement of Jan. 11, 1941, under which Germany undertook to ship industrial equipment of equiva-

lent value to the Soviet Union. Alleged aggressions by Soviet troops along the German-Russian military frontiers were given as the specific provocation for the German attack.

Preparations for Russian Drive. In preparation for the grand assault upon Russia, Hitler withdrew most of his troops and planes from the Balkans, turning over police duties in the occupied regions—but not actual political control—to the Italians, Bulgarians, and Hungarians. The garrisons in the occupied territories of western and northern Europe also were reduced and in part replaced by second- and third-line German troops. German forces were landed in Finland, having received the Helsinki Government's permission to use that area as a base of attack upon the Russians in the North. With the collaboration of refugees from the Baltic States, preparations were made for the anti-Communist revolts that subsequently assisted the German advance into Lithuania, Latvia, and Estonia. Ukrainian exiles in Berlin helped to plot similar but less successful uprisings in the Ukraine. To safeguard Germany's southern flank during the Russian campaign, Hitler on June 18 concluded a ten-year non-aggression pact with Turkey. Nazi agents intensified their activities in Iran and Afghanistan, seeking to distract Moscow and divert both Soviet and British forces from the battlefronts.

Anti-Communist Crusade. Hitler also sought through the attack upon Russia to revive the "crusade against communism" which he temporarily discontinued in 1939. He hoped by this tactic to divide anti-Nazi forces in countries actively or potentially opposed to Germany, and to enlist allies among the anti-Communist governments of the world. Rudolf Hess, third ranking member of the Nazi hierarchy, who startled the world by bailing out of a Messerschmitt fighter plane over Scotland on the night of May 10, was apparently commissioned by Hitler to persuade the British Government to end hostilities with the Reich and even join in the projected German death struggle with Communist Russia. Prime Minister Churchill not only rejected the German peace offer but warned Stalin of Hitler's intentions. When the German invasion of the Soviet Union began, Churchill immediately pledged full cooperation with Russia. On July 13 an Anglo-Soviet mutual aid pact was concluded, later expanded into a full treaty of alliance.

Hitler's war on Soviet Russia intensified isolationist sentiment in the United States, but the American Government extended active diplomatic support and later material aid to the Stalin regime. The Vatican and most of the neutral countries of the world refused to modify their opposition to Nazism and the Hitler Government on the basis of Hitler's new concern for Christian civilization. However Italy, Slovakia, Hungary, Rumania, and Finland joined actively in the war upon Russia. Spain, the Vichy Government in France, and puppet governments in the German-occupied countries expressed sympathy for the German cause and authorized the recruiting of volunteers for service on the eastern front.

At a ceremony in Berlin on November 25, the Anti-Comintern Pact of 1936 was renewed for five years and expanded by the adherence of seven additional governments (see FASCISM). In conferences held in Berlin for three days following the November 25 meeting, the German Government sought to turn the spearhead of the revived anti-Communist alliance against Great Britain and the United States as the allies and supporters of bolshevism.

Adversity in Russia. Within a few weeks after the

German invasion of the Soviet Union it became apparent that the German high command, no less than foreign military experts, had gravely underestimated the Red Army's fighting powers. (The progress of the war, with its tremendously costly battles, is described in the article WORLD WAR.)

Instead of smashing the Russian forces in a few weeks, as he had anticipated, Hitler found himself engaged by an efficient and well equipped army that fiercely and stubbornly resisted every German advance and continued to pour new reserves of men and equipment into the struggle despite repeated German victories. Villages, factories, communications systems, and in so far as possible the growing crops, were destroyed by the retreating Russians in accordance with Stalin's "scorched earth" policy. Guerrillas waged bitter warfare behind the German lines, while throughout the German-occupied countries, and even in Germany and the territories of its allies, revolutionary elements seized upon German difficulties in Russia to intensify both active and passive resistance.

On October 3 Hitler returned to Berlin from his field headquarters in Russia and broadcast from the Sportspalast a report on the German progress since June 22. He declared that Russia "is already broken and will never rise again." The Nazis, he admitted, did not know "how gigantic" Russia's preparations "against Germany had been." However he claimed that the Germans had taken 2,500,000 Russian prisoners, captured or destroyed 22,000 guns and 18,000 tanks, and shot down 14,500 planes. New operations of "gigantic dimensions" were in progress, Hitler said, that would shortly crush the remaining Soviet forces. On October 9 the Reich press chief, Dr Otto Dietrich, announced the collapse of Russian resistance. Speaking again at Munich on November 8, Hitler placed Russian casualties at 8,000,000 to 10,000,000 men and said that German troops had occupied about 644,000 square miles of Soviet territory, including 60 to 75 per cent of all Russia's industries and raw materials. From such a blow, he asserted, "no army in the world could recover, not even the Russian."

Yet Russian resistance continued, and with the aid of winter rains, snow, and cold, the powerful German offensive was finally halted early in December on the outskirts of Moscow and after the capture of Rostov-on-Don had brought the Nazis almost within grasp of the greatly needed oil fields of the Caucasus. On December 8 a military spokesman in Berlin announced that German forces in Russia were forming a stationary defensive line. Speaking to the Reichstag on December 11, Hitler admitted that the German offensive "might well be stopped or hampered by winter conditions." But he declared that with the return of summer weather "there will be no obstacle to stop this forward movement from continuing."

It was now plain to the German people that the Red Army, far from having been annihilated, was taking the offensive all along the front. The difficulty of stabilizing the German lines was indicated by Goebbels' appeal of December 20 for all available warm clothing to be sent the troops on the Eastern front, and by Hitler's replacement of Field Marshal von Brauchitsch as commander-in-chief of the army on December 21. Hitler's assumption of direct responsibility for military operations, and reports of the ousting of other tried German commanders, was generally believed to indicate a fundamental disagreement between the army and the Nazi party over the conduct of the war. These changes came as a shock to the German people and greatly affected their morale.



Photos from Press Association

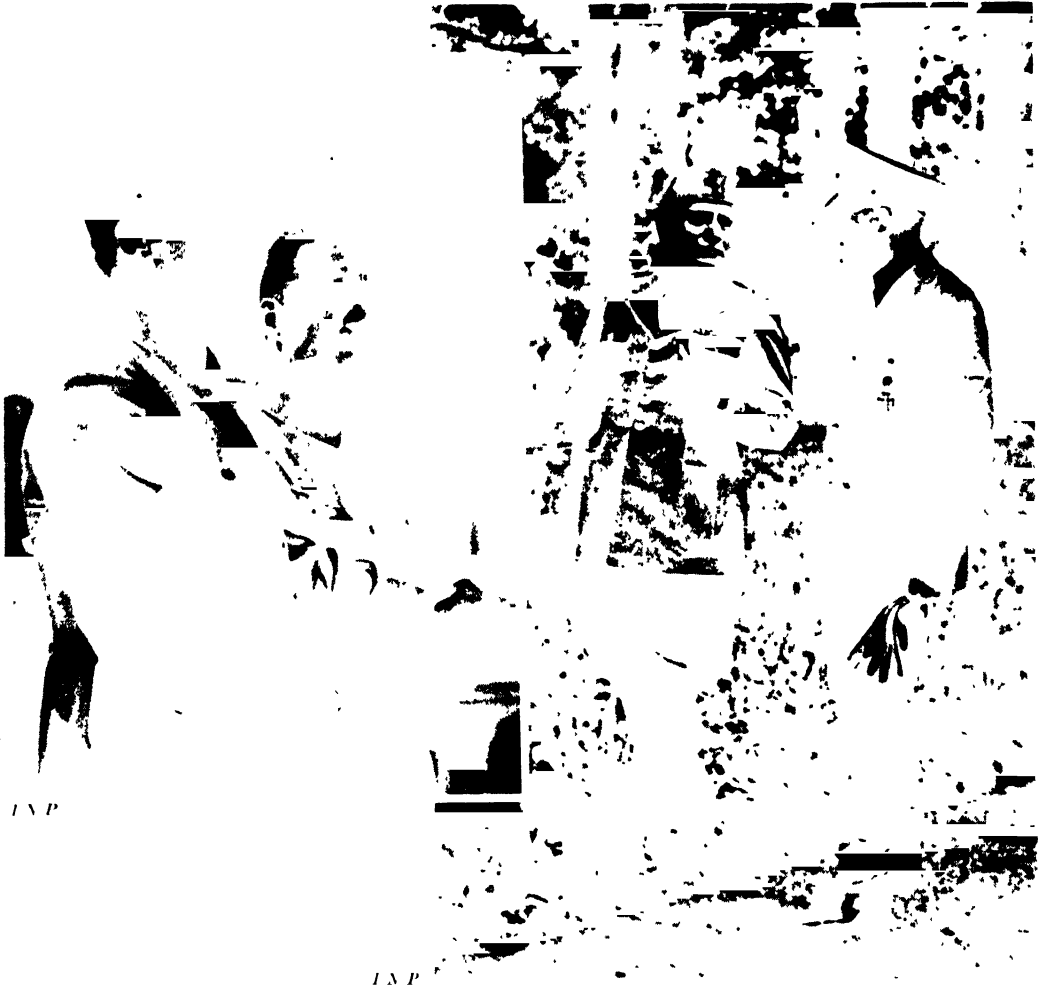
BLITZKRIEG IN THE BALKANS

German tanks crossing the Danube into Bulgaria by a military bridge—March 1

A street in Belgrade, Yugoslav capital, after the dawn attack—Palm Sunday, April 6.

Nazi soldiers sightseeing on the Acropolis after the occupation of Athens—April 27





HITLER WITH RUDOLF HESS
shortly before the Hess flight.

Wide World Radio Photo
HITLER WITH MUSSOLINI
behind the Russian front.

RENEWAL OF THE ANTI-COMINTERN PACT AT THE REICH CHANCELLERY, NOVEMBER 25

Seated left to right are Premier Antonescu of Rumania, Foreign Minister Serrano Suñer of Spain, Premier Bardossy of Hungary, Foreign Minister Count Ciano of Italy, Foreign Minister von Ribbentrop of Germany, Ambassador Oshima of Japan, Premier Tuka of Slovakia (half-covered), Foreign Minister Popov of Bulgaria.

German Rule in Russia. Meanwhile the Reich Government on November 17 had officially confirmed the appointment of Dr. Alfred Rosenberg as "Reich Minister for the East," or chief civilian administrator of occupied Soviet territories. Local administration of this vast region was divided between two Reich Commissioners—one for the Ukraine and the other for the "Ostland," which comprised the Baltic States and White Russia. Eastern Galicia in the Russian Ukraine was placed under the administration of the Government General of Poland, while another big slice of the Ukraine, comprising Odessa and its hinterland, was transferred to Rumania.

Other Nazi Setbacks. The gravity of the German situation was mitigated to some extent by the successes achieved through Japan's surprise attacks upon United States and Allied bases throughout the Far East and the Pacific on December 7 (see *WORLD WAR*). This promised to divert American and British war materials and forces from the Atlantic and Libya to the Pacific area, thus relieving pressure upon Germany. However Japan's treacherous blow helped to solidify American unity and aligned most of the Latin American countries solidly behind the Anglo-American cause.

Meanwhile the British and Russians had crushed Nazi intrigues and conspiracies in Iran and Afghanistan. In November and December came the successful British offensive against Axis forces in Libya, which revived British prestige among the Arabs, and strengthened Turkish resistance to German pressure. The new turn of events appeared to encourage the Vichy Government's resistance to German demands for the use of the French fleet.

War with America. Japan's entrance into the war was conditioned upon a German declaration of war against the United States. The declaration, made on December 11, was accompanied by the publication of a pact between Germany, Italy, and Japan providing for joint prosecution of war against the United States and Britain with all the means at their disposal until the end of hostilities. The three governments agreed not to conclude an armistice or peace with either enemy "without complete and reciprocal agreement." They pledged themselves after the victorious conclusion of the war to "collaborate closely in the spirit of the Tripartite Pact in order to realize and establish an equitable new order in the world."

Revolts in Occupied Countries. The entrance of the United States into the war with a united home front and with a newly established war industry nearing full production was another severe blow to German morale and to Hitler's prospects of victory. It gave new hope to the subjugated peoples of Europe, already spurred to widespread sabotage and revolutionary activity by the German reverses in Russia. A formidable rebellion broke out in Yugoslavia early in the autumn and gained momentum as the months passed. In Greece, Poland, Norway, Czechoslovakia, Belgium, the Netherlands, and occupied France passive resistance gave way to more violent measures of rebellion. Opposition to the Nazi "new order" multiplied in Rumania, Bulgaria, Hungary, and Slovakia, under assiduous fanning by democratic, Communist, and other anti-Axis elements. As soon as the Baltic States and the Ukraine discovered that the Germans had no intention of conceding their independence, local nationalists turned from cooperation with the Reich to vigorous resistance. See the article on each of these countries under *History*.

The Germans and associated Axis regimes resorted to wholesale executions and other harsh reprisals to check the groundswell of revolt, but with-

out success. The United Press correspondent in Berlin reported that from the outbreak of the Russo-German war to November 22, the Germans officially admitted 2,225 reprisal executions in Hungary, Rumania, Bulgaria, and the German-occupied territories outside of Russia. This figure represented only a fraction of the actual number of killings, many of which were unrecorded. Italy, too, was again developing into a German liability as a result of raw materials poverty and growing internal opposition to the war.

Unrest in Germany. Hitler's greatest cause for concern, however, was the spreading discontent and declining morale among the German people. As early as October, Propaganda Minister Goebbels abandoned the attitude of confident optimism that had hitherto characterized Nazi propaganda and began to condition the Germans to face greater difficulties and dangers. On October 2 he again warned that death was the penalty for listening to British broadcasts. In November he published several warnings that to win through to victory and a glorious "new order," the German people would have to grudge themselves for further sacrifices and a hard and relentless war. He declared that behind the "humanitarian phrases" of the Allied spokesmen "lurks the naked will to annihilate us. The Axis Powers actually are fighting for the most elemental existence and the care and burdens that must be laid on all our shoulders in this war would pale before the inferno that awaits us should we lose the war."

Economic Strains. The last quarter of the year produced mounting evidence of the strains imposed upon the national economy and morale by the gigantic expenditure of men and supplies in Russia, the continuous British air raids on the cities, factories, and communications of Western Germany, and the progressive exhaustion of food and raw material supplies. The meat ration was cut 20 per cent in July. In October and November potatoes and tobacco were added to the rationed list for the first time. Clothing and linen rations were cut to about half the 1940 level, despite large-scale seizures of bedding and clothing in the occupied countries. Civilian passenger train services were further reduced at the end of October, and all travel considered unnecessary was banned. Serious disruption of all transportation facilities was reported.

Despite the rigid governmental controls over the financial and economic system, fear of inflation developed to the point at which many Germans sought to spend their money for anything representing tangible value. The Assistant Minister of Finance on October 29 assailed this practice as unpatriotic and foolish. To encourage savings, he announced that persons renouncing the right to ask repayment of their savings deposits until 12 months after the end of the war, would be exempted from income and other taxes on these deposits and the accrued interest.

The growing shortage of manpower in the army and in industry was reflected in measures to speed the flow of high school students into industrial and white collar jobs. Compulsory child labor on farms was introduced in the summer. The Government also arranged to expand the number of foreign workers in German agriculture and industry. At the end of November the number of foreign civilian workers employed in Germany was reported at nearly 2,000,000. Thousands of Italian and other foreign agriculturalists were recruited during the autumn months for the task of exploiting the rich agricultural resources of the conquered Ukraine.

Nazi-Army Friction. In December Stockholm

sources reported a serious spotted typhus epidemic in Poland and the occupied districts of Russia. There were evidences of growing friction between the German army and the Nazi party, as well as factionalism within the Nazi hierarchy. In December it was announced that Hitler had been instructed by his physicians to take a complete rest at Berchtesgaden because of physical and nervous exhaustion from his efforts in directing the Russian campaign.

Church-State Conflict. The struggle between the Nazi party and the Roman Catholic Church continued, despite the support accorded the war against Russia by many Catholic priests. Senator James M. Mead of New York submitted to the U.S. Senate on October 6 documentary evidence to substantiate his charge that the Nazis were destroying the Catholic Church in Germany. The dean of St Hedwig's Roman Catholic Church in Berlin was jailed by the Gestapo in October for criticizing the Nazis and offering prayers for Jews. A new and more drastic purge of the Jews was inaugurated during October, 1941. In August the Christian Science movement in Germany was completely outlawed "for the protection of public and state."

Other Events. Continuing his policy of bringing all German-speaking inhabitants of Europe under direct German rule, Hitler by the spring of 1941 had resettled half a million Germans in the provinces annexed from Poland. He also annexed to the Reich a section of Yugoslavia adjoining Austria, which contained a German-speaking minority. Wilhelm II died at Doorn, the Netherlands, where he had been an exile since the German collapse in 1918 (see NECROLOGY).

See AFGHANISTAN, ARGENTINA, BELGIUM, BOLIVIA, BRAZIL, BULGARIA, CHILE, CHINA, COLOMBIA, COSTA RICA, CUBA, DENMARK, ECUADOR, EGYPT, EIRE, ESTONIA, FINLAND, GREAT BRITAIN, GREECE, IRAQ, ITALY, JAPAN, LATVIA, LITHUANIA, LUXEMBURG, NETHERLANDS, NORWAY, PERU, POLAND, SLOVAKIA, SPAIN, SWEDEN, SYRIA, UNION OF SOVIET SOCIALIST REPUBLICS, URUGUAY, and VENEZUELA, under *History*; UNITED STATES under *Foreign Affairs*; ARCHITECTURE; BIRTH CONTROL; CHEMISTRY, INDUSTRIAL; COMMUNISM; DAIRYING; FASCISM; LABOR CONDITIONS under *Employment*, etc.; LIVESTOCK; MUSIC; NAVAL PROGRESS; NEWSPAPERS AND MAGAZINES; PAN AMERICANISM; RAPID TRANSIT; REFUGEES; ROMAN CATHOLIC CHURCH; THEATER; WATERWAYS, INLAND; WORLD WAR.

GERMICIDAL LAMPS. See ILLUMINATION.

GIBRALTAR. A British crown colony and fortified naval base at the western entrance to the Mediterranean. It comprises a long mountain called the "Rock" which has an extreme height of 1,396 feet. A canal, 20 feet wide, built across the isthmus as a wartime safety precaution, now separates Gibraltar from the mainland. There is a deep-water Admiralty harbor with an area of 440 acres, containing three graving docks. Area, 1 $\frac{1}{8}$ square miles. Total fixed population (Jan. 1, 1939), 20,339, of whom 16,000 were evacuated to Great Britain, Madeira, and Jamaica because of the danger of heavy casualties in case of heavy attacks from the air.

Trade. Gibraltar is a free port and does an extensive shipping trade. During peacetime it is a popular tourist resort. The supply of provisions and fuel to shipping and the transit of cargoes to Spain and Morocco are the principal occupations of the people. Shipping (1938): 4,752 vessels aggregating 13,772,321 tons entered. Roads (1940): 23 miles.

Government. Chief sources of revenue are the port dues, rent of the Crown estate in the town, and duties on wine, tobacco, spirits, beer, gasoline, and perfumery. In 1938 revenue totaled £207,628 and expenditure £133,725. The governor is assisted in the administration by an executive council of seven members. There is no legislative council, the power to legislate being vested in the governor who, in addition, is the general officer commanding the garrison. Governor and Commander-in-Chief, Gen. Viscount Gort (appointed Apr. 26, 1941).

History. During 1941 the work of modernizing the fortress and extending the network of tunnels that honeycomb the "Rock" was carried forward night and day by the troops. Reservoir upon reservoir are built in the rock to receive the heavy fall of rain water from the outside catchment areas and thus provide enough water for the rest of the year. Masses of rock were blasted to accommodate everything necessary for thousands of men to live and fight for a prolonged time. A large three-storey barracks, hospitals fully equipped, electric light power stations, washrooms, and cookhouses are situated in the heart of the "Rock"

See SPAIN under *History*.

GIFTED CHILDREN. See PSYCHOLOGY.

GIFTS. See PHILANTHROPY.

GILBERT AND ELLICE ISLANDS. See BRITISH EMPIRE.

GLANDS. Study of. See BIOLOGICAL CHEMISTRY.

GLASS. The all-time high production, which was established in 1940 by glass manufactures, was broken for 1941, according to *The Glass Industry* magazine, which places the total manufactured value of all glass products for the year at \$470,000,000. This record volume was 28 per cent greater than in 1940 (\$368,000,000), and with \$320,000,000 in 1939.

Plate glass production amounted to 190,403,612 square feet or 16 per cent more than the 1940 total of 164,371,570 square feet. This output was the largest since 1937 when the industry produced 192,592,000 square feet.

Window glass production totalled 16,400,000 boxes or 20 per cent more than the 1940 figure. This represents a new production record for the window glass industry.

Glass container production for the 12 months of 1941 reached the record level of 70,440,010 gross which was 30 per cent greater than the previous record of 54,265,000 gross set in 1940. Shipment figures for all of 1941 exceeded the 1940 volume by 32 per cent, establishing the record total of 68,961,339 gross Stocks of all types of ware declined with the exception of food containers, liquor ware, milk bottles, and domestic jelly glasses which increased.

Miscellaneous glass products manufactured during 1941 was estimated at \$164,000,000 or an increase of 29 per cent over 1940's production estimate of \$127,000,000. Machine-made tumbler production amounted to 53,005,615 dozens—22 per cent above the previous year's level. The finished stocks of tumblers rose 6 per cent above the 1940 level to 8,936,310 dozens. Manufacturers' sales of machine-made table, kitchen, and household glassware increased 16 per cent over the 1940 total to 39,085,634 dozens. Illuminating ware sales were \$5,480,241 or one-third greater than in 1940.

It is estimated that the number employed in the glass industry during 1941 approximated 87,000 persons. Glass manufacturers paid out close to \$135,000,000 in wages during 1941 as compared to \$104,000,000 in 1940 and \$90,000,000 in 1939.

Foreign trade statistics have been suspended for the duration of the war so that this information cannot be used by the enemy. This is the same policy that other belligerent countries have followed in order to maintain secrecy relative to vital statistics. During the first 9 months of 1941, exports of glass and glass products totalled \$15,018,000 as compared with \$9,987,000 in 1940's comparable months and \$6,000,000 in 1937. Imports dropped from \$1,963,000 in 1940's January-September period to \$1,023,000 in 1941; this was less than one-seventh of 1937's corresponding trade.

See CHEMISTRY, PURE under *Monomolecular Films*; PHOTOGRAPHY under *Sensitized Materials*.
JOHN R. HOSTETTER.

GLIDERS. See MILITARY PROGRESS.

GLYCEROL. See CHEMISTRY, INDUSTRIAL.

GOA. See PORTUGAL under *Colonial Empire*.

GOLD. Total mine production of recoverable gold in the United States and Territories in 1941, according to the preliminary report of the U.S. Bureau of Mines, was 5,858,871 fine oz., 2 per cent less than 1940's output of 5,984,163 oz. Valued at \$35 per fine oz. it amounted to \$205,060,485 compared with \$209,445,705 in 1940. California mined 24 per cent of the total production; 19 per cent came from the Philippines, Alaska contributed 12 per cent, South Dakota 11 per cent, Colorado, Nevada, and Utah each 6 per cent, Arizona 5 per cent, Montana 4 per cent, Idaho 3 per cent, the remaining States and Puerto Rica, 4 per cent. A fall in these figures is expected in 1942 in view of the fact that all United States gold mines need new equipment or repairs to old and cannot get them because of priority ratings. The nation has greater need for copper, lead, or zinc, for instance, than for gold. For this reason the OPM excluded the United States placer mines (which produce one third of the nation's gold) when it gave all other United States

U. S. MINE PRODUCTION OF GOLD, 1940-41
(RECOVERABLE METAL)

State or territory	Fine ounces		Increase or decrease %
	1940	1941 ¹	
Western States and Alaska:			
Alaska	755,970	690,649	-9
Arizona	294,807	315,000	+7
California	1,455,671	1,411,800	-3
Colorado	367,336	377,503	+3
Idaho	146,480	150,000	+2
Montana	272,602	246,500	-10
Nevada	383,933	372,300	-3
New Mexico	35,943	28,489	-21
Oregon	113,402	94,600	-17
South Dakota	586,602	610,223	+4
Texas	312	325	+4
Utah	355,494	347,764	-2
Washington	82,136	81,569	-1
Wyoming	740	482	-35
	<u>4,851,488</u>	<u>4,727,204</u>	-3
Eastern States:			
Alabama	5	35	+600
Georgia	961	300	-69
North Carolina	1,943	3,117	+60
Pennsylvania	1,840	2,675	+45
South Carolina	13,076	15,400	+18
Tennessee	173	228	+32
Virginia	458	245	-47
	<u>18,456</u>	<u>22,000</u>	+19
Central States:			
Indiana	5	.....	-100
Philippine Islands	<u>1,114,201</u> ²	<u>1,109,659</u> ²	(³)
Puerto Rico	<u>13</u> ²	<u>8</u> ²	-38
	<u>1,114,214</u>	<u>1,109,667</u>	(³)
Total United States.	<u>5,984,163</u>	<u>5,858,871</u>	-2

¹ Preliminary figures. ² Refinery receipts. ³ Decrease less than 0.5 per cent.

mines an A-8 priority for repairs in September, 1941.

The year 1940 was the peak year for gold imports. Gold imports for 1941, mostly from Canada, Latin America, and the Far East, were something less than \$1,000,000,000. By the end of the year gold stock earmarked for foreign account had increased to about \$2,200,000,000, compared with \$1,807,673,000 at the end of 1940. Monetary gold stock in the United States was \$22,750,000,000 at the end of 1941, compared with \$21,994,548,000 (1940).

The continued buying of gold on the part of the United States has meant \$700,000,000 a year in dollar exchange to Great Britain.

GOLD COAST. A British colony in West Africa, consisting of the Gold Coast colony (23,937 sq. mi.), Ashanti (24,379 sq. mi.), Northern Territories (30,486 sq. mi.), and Togoland (13,041 sq. mi.). Total area, 91,843 square miles, total population (1940 estimate), 3,962,520, including 3,182 non-Africans. Chief towns (1931 census figures): Accra, the capital (72,977), Kumasi (43,413), Sekondi (21,614), Cape Coast (19,412), Tamale (18,591). Education (1939-40): 62,218 pupils in schools of all kinds.

Production and Trade. The main products are cacao, kola nuts, palm kernels, copra, rubber, maize, yams, timber, gold, manganese, and diamonds. Gold production (1940): 880,929 troy oz. Trade in 1940 (sea-borne trade only, excluding specie and currency notes): £6,707,275 for imports (£7,141,789 in 1939) and £13,636,538 for exports (£12,864,472). Gold (£6,177,725), cacao (£5,101,219), manganese (£789,608), and diamonds (£464,438) were the chief exports in 1939. Shipping (1939): 4,334,463 tons entered and cleared. Roads (1940): 5,092 miles.

Government. Finance (1939-40): £4,956,086 for revenue and £4,853,054 for expenditure; public debt £10,400,000. Budget (1940-41): £3,965,000 for revenue and £3,620,000 for expenditure. A governor, assisted by executive and administrative councils, administers the Gold Coast colony. Ashanti, Northern Territories, and (British) Togoland are administered by the governor of the Gold Coast, and their statistics for trade, etc., are included in the general total for the Gold Coast. Governor and Commander-in-Chief, Sir Allan Burns (succeeded Sir Arnold Hodson during October, 1941).

GOLD IMPORTS, GOLD RESERVES. See FINANCIAL REVIEW; also, BANKS AND BANKING.

GOLF. Before it was struck a deadly blow late in the year by the news that golf balls would be unobtainable for the duration of the war, the ancient Scottish game was decidedly healthy, with championships falling to deserved golfers. The National open championship, most prized of all, finally went to the gifted blade of Craig Wood, who had been perennial runner-up for almost every worthwhile title in the world. The National amateur championship went to Bud Ward, the Spokane star, and the national women's title was taken by Mrs. Frank Newell, the former Betty Hicks, who turned professional soon after winning the silverware at Brookline, Mass.

Craig Wood's victory on a splendid 284 for the seventy-two hole trip around Fort Worth's Colonial Club course in June was, of course, the high spot of the year. For sixteen years this blond New Yorker had been tapping at the door, but never breaking

into regal society. This time his final score was good enough to beat out Denny Shute, who had beaten Wood in the British open eight years back in a play-off, by three strokes. Previous to this conquest of the field in Texas, Wood had shattered his jimx by capturing the Master's Tournament in Georgia. After a bad 79 on the third round, the defending champion, Lawson Little, eliminated himself in the open.

Ward's victory in the amateur, played in Omaha, was unpopular with the galleries, because Ward had made derogatory remarks about Omaha hospitality and the condition of the golf course. When he played Pat Abbott in the finals, he was booed every time he swung his club and at the end the loser was carried off high on the shoulders of the fanatics. Ward had called the course a "cow pasture."

Vic Ghezzi, one of the finest stylists in the game, finally broke through to win the Professional Golfer's Association crown in the latter part of the year at Denver, whipping Byron Nelson in the final.

There was no international competition because of the military wrangling.

GOUGH ISLAND. See BRITISH EMPIRE

GRADE CROSSING ELIMINATION. See ROADS AND STREETS.

GRAHAM LAND. See FALKLAND ISLANDS.

GRAMICIDIN. See MEDICINE AND SURGERY under *Chemotherapy*

GRAPHIC ARTS. See ART under *Prints*.

GRAPHITE. See CHEMISTRY, INDUSTRIAL, under *Strategic Materials*

GRAY HAIR. See BIOLOGICAL CHEMISTRY under *Vitamins*.

GREAT BRITAIN. Official designation for the political union embracing England, Scotland, and Wales. Capital, London. Sovereign in 1941, George VI, who succeeded to the throne upon the abdication of Edward VIII on Dec. 10, 1936, and was proclaimed King on Dec. 12, 1936. Great Britain, together with Northern Ireland, the Isle of Man, and the Channel Islands, forms the United Kingdom of Great Britain and Northern Ireland. For statistical purposes, the Isle of Man, the Channel Islands, and in some cases Northern Ireland, are included under Great Britain. See BRITISH EMPIRE, IRELAND, NORTHERN.

Area and Population. The area of Great Britain, the census population of Apr. 27, 1931, and the estimated population on June 30, 1939, are shown by political divisions in the accompanying table.

GREAT BRITAIN AREA AND POPULATION

Divisions	Area in sq miles	Population ^a	
		1931	1939
England ^b	50,874	37,794,003	41,375,000
Wales	7,466	2,158,374	
Scotland	30,405	4,842,980	5,006,700*
Isle of Man	221	49,308	145,000
Channel Islands	75	93,205	
Total	89,041	44,937,444	46,526,700

* Exclusive of army, navy, and merchant seamen abroad.
^b Including Monmouthshire ^c 5,045,000 on June 30, 1940.

Live births in England and Wales in 1940 numbered 607,131 (14.6 per 1,000); deaths, 572,882 (14.3 per 1,000); marriages, 468,267. In Scotland there were 86,389 births (17.1 per 1,000), 72,775 civilian deaths (14.9 per 1,000), and 53,599 marriages. British emigrants to places outside of Europe in 1938 numbered 34,144; immigrants of British nationality into Great Britain, 40,611. Estimated populations of the chief cities in 1937 (except when

otherwise indicated) were: Greater London, 8,655,000; County of London, 4,094,100; Glasgow, Scotland, 1,131,800 (1940); Birmingham, 1,029,700; Liverpool, 836,300; Manchester, 736,500; Sheffield, 518,200; Leeds, 491,880; Edinburgh, Scotland, 475,500 (1940); Belfast, Northern Ireland, 438,112; Hull, 319,400; Bradford, 289,510; Newcastle-on-Tyne, 290,400; Stoke-on-Trent, 272,800; Nottingham, 278,800; Leicester, 262,900; Portsmouth, 256,200; Croydon, 242,300, Cardiff, Wales, 224,850; Plymouth, 210,460; Salford, 201,800.

Education and Religion. Enrollment in the 2,678 elementary schools in England and Wales numbered 4,971,357 in 1939, and the total net expenditure of local authorities for elementary education was £74,970,611 for 1939-40. In Scotland there were 2,899 primary schools with 604,977 enrolled pupils, and the total ordinary expenditure of educational authorities for 1939-40 was £14,348,639. England and Wales had 2,156 secondary schools recognized by the Board of Education as efficient, with 569,089 pupils in 1937-38. Of these schools, 1,398 received grants-in-aid. Total net cost of secondary education in 1939-40 was £23,724,843. In Scotland there were 252 secondary schools with an average enrollment of 157,388 pupils in 1939. There are 11 universities in England, 4 in Scotland, and 1 in Wales. The combined student enrollment in 1940-41 was 45,660; the teaching staff numbered 6,076.

The Church of England (q v), with an Episcopal form of government, and the Church of Scotland (Presbyterian) are the "established religions" in England and Scotland, respectively. Recent statistics of "full members" of leading denominations in England and Wales were: Anglican, 2,294,000; Methodist, 1,250,589; Congregational, 494,199; Baptist, 392,535; Calvinistic Methodist, 261,287. The number of Roman Catholics was estimated at 2,361,504 in 1937. The Church of Scotland had 2,522 congregations with 1,285,011 members on Jan. 1, 1940. There were 404 Scottish Episcopal churches and missions with 61,547 communicants in 1939, and 450 Roman Catholic churches, chapels, and stations, with 614,021 adherents in 1937.

Agriculture. Great Britain and the Isle of Man in 1939 had 11,923,000 acres of arable land, 17,355,000 acres of permanent pasture, and 312,149 acres of orchards and small fruits. The market value of agricultural and horticultural production in England and Wales in 1938-39 was estimated at £219,800,000 (livestock and products, £154,930,000, farm crops, £31,800,000, fruits and vegetables, £33,070,000). Yields of chief crops in 1939 in the United Kingdom were (in metric tons): Wheat, 1,680,000; barley, 903,300; oats, 1,760,800; potatoes, 5,197,100 (1938); beet sugar, 494,100; hops, 13,100 (1938). Livestock statistics for 1939 in Great Britain (exclusive of the Isle of Man and the Channel Islands) were: Cattle, 8,118,788; sheep, 25,992,793; swine, 3,767,365; horses, 987,415; poultry (including Northern Ireland), 69,119,000. The wool clip as in the grease was about 108,700,000 lb. in 1938.

Mining and Manufacturing. Statistics of industrial production have been withheld since the outbreak of the war. Mineral and metallurgical output of the United Kingdom in 1938 (except where otherwise indicated) was (in metric tons): Coal, 231,875,000; iron ore, 3,615,000, pig iron and ferro-alloys, 6,871,000; steel ingots and castings, 10,561,000; copper, 7,200, aluminum (smelter production), 25,500 (1939); tungsten ore, 154; lead ore, 30,200; zinc (smelter production), including some secondary metal, 50,400 (1939). The production of al-

coholic spirits was 58,011,000 U.S. gal.; beer, 1,066,775,000 gal. Vessels (of 100 or more tons) launched in 1938 aggregated 1,030,000 gross tons. A total of 447,561 motor vehicles were manufactured in 1938 (342,390 passenger cars and 105,171 trucks and buses). Rayon manufacture was 54,450 metric tons in 1939.

Fisheries. During 1938 the fisheries of England and Wales landed 776,635 tons of non-shell fish valued at £12,233,209 and those of Scotland 269,028 tons valued at £3,826,671. Great Britain's shell-fish catch was valued at £488,490. In order of value, the principal fish caught were cod, herring, haddock, hake, and plaice.

Foreign Trade. Recent trends in British foreign trade are shown in the accompanying table.

BRITISH FOREIGN TRADE^a
[In thousands of pounds sterling]

Calendar year	Imports ^b	Re-exports (imported)		Total of exports ^c	Excess of exports
		British products ^c	merchandise ^c		
1929	1,220,765	729,349	109,702	839,051	381,714
1932	701,670	305,024	51,021	416,045	285,625
1937	1,027,824	521,391	75,134	596,525	431,299
1938	1,019,509	470,755	61,525	532,280	387,228
1939	885,513	439,536	46,034	485,569	399,943
1940	1,099,869	413,084	26,189	439,273	660,596

^a Not including bullion and specie movements ^b C.i.f. value. ^c F.o.b. value

Of the 1940 imports, food, drink, and tobacco accounted for £421,004,000; raw and semi-manufactured materials, £336,495,000; manufactured articles, £336,209,000. Of the exports of British produce, £33,352,000 represented food, drink, and tobacco, £36,292,000 raw and semi-manufactured materials, and £335,960,000 manufactured articles. For the latest available data on the distribution of British trade, see YEAR BOOK for 1939, p 328.

Finance. Budget operations for the fiscal years ending March 31 are shown in the accompanying table.

UNITED KINGDOM. BUDGET OPERATIONS

March 31	Receipts	Expenditures	Deficit
1937-38	£872,580,000	£908,661,000	£36,081,000
1938-39	927,285,000	1,068,049,000	140,764,000
1939-40	1,049,189,000	1,816,873,000	767,684,000
1940-41	1,408,867,000	3,884,288,000	2,475,421,000
1941-42*	1,636,000,000	4,206,957,000	2,570,957,000

* Estimates

The drastic increase in expenditures was due almost entirely to the increased cost of defense services, which soared from £262,117,000 in 1937-38 to £3,220,000,000 in 1940-41 and an estimated £3,500,000,000 in 1941-42. The cost of civil services rose from £407,765,000 in 1937-38 to £434,957,000 (estimated) in 1941-42, while debt and other consolidated fund services increased from £238,779,000 in 1937-38 to £272,000,000 (estimated) for 1941-42. The principal sources of revenue in the 1941-42 budget estimates, with actual 1937-38 returns in parentheses, were: Income tax, £605,000,000 (£297,986,000); other internal taxes, £387,000,000 (£173,360,000); customs and excise, £578,000,000 (£335,261,000); motor-vehicle duties, £39,000,000 (£34,608,000); other non-tax revenue, £27,000,000 (£31,365,000). Of the deficit of £2,475,421,000 in 1940-41, more than half was financed by receipts from various savings issues and the remainder by increasing the floating debt.

The growth of the national debt during the war and its composition is shown in the accompanying table.

BRITISH NATIONAL DEBT
[In millions of pounds sterling]

	Mar 31, 1939		Mar 31, 1940		Mar 31, 1941	
	Amount	%	Amount	%	Amount	%
Floating debt	841	10	1,489	17	2,813	26
On-tap and savings issues ^a	385 ^b	5	490	5	1,139	14
Other debt	6,931	85	6,952	77	7,022	61
Total debt	8,144	100	8,931	100	11,394	100

^a Including interest-free loans and Savings Certificates. ^b Old issues of Savings Certificates.

The average free exchange value of the pound sterling was \$4.8894 in 1938, \$4.4354 in 1939, \$3.83 in 1940, and \$4.0318 in August, 1941.

Shipping. On June 30, 1939, the British merchant fleet aggregated 21,001,925 gross tons. New construction and acquisition of fleets from countries overrun by Germany offset war losses up to Nov. 1, 1940, when the total shipping available to the British was placed at 21,000,000 tons. During 1940 the 24 British liner companies, owning 479 ships of 3,572,758 gross tons, and 43 cargo companies, with 289 vessels of 1,373,310 gross tons, reported aggregate profits of £9,111,050.

Railways, etc. There were 20,162 miles of railway line open in Great Britain on Jan. 1, 1939 (51,000 miles of track). Net revenue for the year was £28,984,000. Roads and highways in the United Kingdom totaled 180,527 miles in 1940. The total length of British home and overseas civil air routes was 30,624 miles in August, 1939. Some were suspended for the duration of the war. Twice-a-week service between London and Lisbon, Portugal, was inaugurated on June 4, 1940. A North Atlantic air ferry and supply route was inaugurated via Botwood, Newfoundland, in 1941. Civil aircraft flew a total of 5,000,000 miles and carried nearly 30,000,000 airmail letters during 1940.

Government. The United Kingdom of Great Britain and Northern Ireland is a limited monarchy, with an unwritten constitution, under which final legislative, judicial, and administrative authority is vested in a Parliament of two houses, acting through a cabinet drawn from its members. The House of Commons consists of 615 members, elected by universal male and female suffrage on the basis of one member for every 70,000 of population. The House of Lords in 1941 had 788 members, including 24 minors not seated, who are variously selected—by heredity, appointment, by virtue of office, and by election.

The standing of the government parties in 1941, modified slightly by by-elections, was as follows (names of leaders in parentheses): Conservatives (Winston Churchill), 374; Labor (Clement R. Attlee), 164; Liberal National party (Viscount Simon), 32; Liberals (Sir Archibald Sinclair), 18; Independents, 11; National Labor party (Malcolm MacDonald), 7; Nationals, 5, total, 611. The Opposition consisted of 3 Independent Laborites (leader, James Maxton) and 1 Communist.

The last general election was held in November, 1935. The election due in 1940 was postponed until the end of the war through an agreement reached by the principal political parties on Sept. 22, 1939. On May 12, 1940, Winston Churchill replaced Neville Chamberlain as Prime Minister and the Government was widened to include the Labor and Liberal opposition (see YEAR BOOK for 1940, p. 320 f.). There were successive reorganizations of the Churchill Government—on Oct. 3 and Dec. 22, 1940, and on Feb. 8 and May 2, 1941. On Sept. 3, 1939, Prime Minister Chamberlain replaced the Cabinet of 22 members with

a War Cabinet of 9 members, who assumed responsibility for coordinating the nation's war effort. The other Ministers (heads of Government departments) no longer retained Cabinet rank. The War Cabinet was assisted by committees of Ministers, usually acting under the direction of a Cabinet member.

Members of the War Cabinet as reorganized Feb. 8, 1941, with their party affiliations, were: Prime Minister, First Lord of the Treasury, and Leader of the House of Commons, Winston Churchill (C.); Chancellor of the Exchequer, Sir Kingsley Wood (C.); Foreign Affairs, Anthony Eden (C.); First Lord of the Admiralty, A. V. Alexander (Labor); War, David Margesson (C.); Air, Sir Archibald Sinclair (Liberal); Lord Privy Seal, Clement R. Attlee (Labor); Minister without Portfolio, Arthur Greenwood (Labor); Aircraft Production, Lord Beaverbrook (C.).

Other Ministers not in the War Cabinet were: Lord President of the Council, Sir John Anderson (C.); Lord Chancellor, Viscount Simon (Liberal National); Home Affairs, Home Security, Air Raid Precautions, Herbert Morrison (Labor), Dominions, Viscount Cranborne (C.); Colonies, Lord Moyne (non-party); India and Burma, L. S. Amery (C.); Chancellor of the Duchy of Lancaster, Lord Hankey (non-party); Scotland, D. J. Colville (Labor); Trade, Oliver Lyttelton (C.); Health, Ernest Brown (Liberal National); Agriculture and Fisheries, Robert Hudson (C.); Education, H. Ramsbotham (C.); Labor and National Service, Ernest Bevin (Labor); Supply, Sir Andrew Rae Duncan (C.); Transport, J. T. C. Moore-Brabazon (C.); Information, Alfred Duff-Cooper (C.); Postmaster-General, W. S. Morrison (C.); First Commissioner of Works, Lord Reith (C.); Food, Lord Woolton (C.); Attorney-General, Sir Donald B. Somervell (C.); Economic Warfare, Hugh Dalton (Labor); Pensions, Sir W. J. Womersley (C.); Solicitor-General, Sir William A. Jowitt (Labor); Lord Advocate, T. M. Cooper (C.); Solicitor-General for Scotland, James S. C. Reid. For changes in the Government during the remainder of 1941, see below under *History*.

HISTORY

In spite of serious setbacks encountered during the spring of 1941, the year as a whole witnessed a marked improvement in Britain's war prospects. In June, 1940, the British Empire and a few weak Allies had been engaged in a seemingly hopeless struggle with an Axis coalition dominating the European Continent and possessing immense superiority in all arms of warfare except at sea. But by the end of 1941 two of world's most powerful nations—the United States and Russia—and a score of smaller countries had joined forces with Britain in a world struggle with the Axis. British military resources had been enormously strengthened. Suffering from grievous wounds inflicted by the Red Army in Russia and by the British forces in Libya, at sea, and in the air, the German military colossus appeared doomed to defeat. Japan's entrance into the conflict with sudden, treacherous attacks upon Anglo-American bases in the Pacific and the Far East threatened to delay, but not to avert, the final defeat of the Axis. See *WORLD WAR* for a full account of military operations.

Failure in the Balkans. At the beginning of 1941, British prospects brightened as a result of Italian reverses in Libya, the Mediterranean, and Greece. But hope of Italy's military collapse vanished with the appearance of strong German air reinforcements in the Mediterranean area in January. There-

after the British naval, air, and land forces throughout the Near and Middle East were placed increasingly on the defensive. Despite Prime Minister Churchill's warnings, Bulgaria surrendered to German politico-military pressure and joined the Axis on March 1. Britain's ally, Turkey, yielding in part to the German "war of nerves," signed a declaration of friendship with Bulgaria February 17 and remained neutral during the subsequent German drive into Yugoslavia and Greece.

British diplomacy and pledges of further military support bolstered Greek resistance to German demands for termination of the Italo-Greek war. They also encouraged the spontaneous revolt of the Serb army and people on March 27, which balked Hitler's plans for a bloodless Axis conquest of Yugoslavia. Thus Britain succeeded in forcing Germany to open a second front in the Balkans and possibly averted a successful Nazi invasion of the Near East. But it did so at great cost to the Allied military and political position throughout the eastern Mediterranean area.

In April and May the smashing German victories in Yugoslavia and Greece quickly overwhelmed two promising British allies, and drove out the British expeditionary force with the loss of all its heavier weapons and equipment. The loss of Crete and of all the ground gained in Libya by the December-January offensive followed soon afterwards. The thinly-spread and inadequately equipped British forces in the Near East were forced to deal at the same time with a pro-Axis outbreak in Iraq and with Axis intrigues in Syria. In the evacuation of Greece and Crete, the British navy suffered severe losses. In June of 1941 there seemed to be little ground for hope that the British and Allied forces could prevent the German occupation of the Near East and seizure of the strategically important Suez Canal and Iraq oil fields.

Resurgence in Middle East. The gloomy outlook in the Mediterranean region changed as a result of Hitler's decision to attack Russia on June 22. The withdrawal of German forces in Iraq and Syria enabled small British forces to oust the pro-Axis regime in Iraq and, in collaboration with Free French troops, to carry out the occupation of Syria. The easy British victory over the main Italian forces in Italian East Africa was completed in time to shift Indian and South African divisions from East Africa to the imperiled Egyptian frontier. The strong Axis forces there were thus held in check while a steady inflow of fresh troops from the British dominions and of American tanks, planes and other arms through the Red Sea enabled the British to re-equip and strengthen the armies evacuated from Greece and Crete.

These developments, coupled with further extension of Anglo-American aid to Turkey, held that strategically-situated country neutral while the Allies consolidated their hold on Syria and Iraq and while Britain, with Russian cooperation, ended Axis intrigues in Iran and Afghanistan. By November, British forces in the Middle East were strong enough to crush the last Italian pocket of resistance in Ethiopia and launch a successful offensive against powerful Axis forces in Libya. By the year's end, the British had erected a firm military barrier hemming in the Axis from Benghazi in Cyrenaica on the west to the shores of the Caspian Sea. British naval supremacy in the Eastern Mediterranean was virtually unchallenged. Except for Crete and the lost foothold in Greece, the strategic and military setbacks of the spring had been more than recouped. The British sea blockade of the Axis-

dominated continent was reinforced by the Middle Eastern land blockade. Meanwhile the greatest leak in the blockade had been plugged when Hitler's invasion of Russia cut off the foodstuffs and raw materials entering Europe from the Soviet Union.

Effect of Russo-German War. The German assault upon the Russians conferred enormous benefits upon hard-pressed Britain in other respects. The offensive power of the German army was blunted at the cost of millions of Russian, rather than British, lives. Britain obtained a respite for the re-equipment and strengthening of its forces in all areas of combat. While most of the German air force was engaged in Russia, the Royal Air Force gained equality with the Luftwaffe and systematically blasted away at German economic and military nerve-centers in Western Germany and occupied Europe. German reverses in Russia revived hope among the conquered peoples of Europe for liberation from German rule, and the British were effectively aided by the numerous governments-in-exile in London in stirring up active and passive resistance to the Axis throughout Europe.

"V" for Victory. This situation was skillfully exploited by a propaganda campaign launched by the British Broadcasting Corporation on July 4, utilizing the letter "V" as the symbol for victory. Speeches in all European languages called upon the peoples of conquered countries to use the letter "V" or its Morse code equivalent—three dots and a dash—as a symbol of resistance to the Axis and of faith in eventual liberation. The opening bar of Beethoven's C minor symphony, consisting of three short notes followed by a long one, was used as the *leitmotif* of the "V" movement. The idea rapidly took hold throughout occupied Europe, and was generally credited with contributing to the anti-German revolt that gained headway during the autumn and winter months.

Anglo-Soviet Alliance. On May 12 Rudolf Hess, third ranking member of the Nazi hierarchy, landed by parachute in Scotland from a German fighter plane and was taken prisoner. This at first aroused belief in Britain that Hess had fled because of disagreement with Hitler and that a second blood purge was under way in Berlin. Subsequent indications were that Hess had been commissioned by Hitler to induce the British Government to accept a truce and, if possible, to join Germany in an attack upon the Soviet Union. Prime Minister Churchill not only rejected this offer, but warned Stalin that the German attack was impending.

On the day the attack began, Churchill declared that the destruction of "Hitler and every vestige of the Nazi regime" was Britain's "single, irrevocable purpose." "Any man or State who fights against nazism will have our aid," he said. "Any man or State who fights with Hitler is our foe. . . . It follows, therefore, that we will give whatever help we can to Russia and to the Russian people." His offer of technical and economic aid to the Soviet Union was immediately accepted. This paved the way for the conclusion in Moscow on July 12 of a Soviet-British pact pledging the two governments "to render each other assistance and support of all kinds in the present war against Hitlerite Germany" and not to "negotiate nor conclude an armistice or treaty of peace except by mutual agreement."

On August 16 the British signed another agreement in Moscow, promising to supply arms and other war materials to the Soviet Union on a credit basis, the preliminary advance being fixed at £10,000,000. In October an Anglo-American mission,

with Lord Beaverbrook representing the British, completed arrangements in Moscow to speed up the delivery of war supplies to the hard-pressed Red Army. British tank factories in September allotted a week's production to Russia. Arms and supplies from Britain began to reach Archangel and the Caucasus front (via Iran) in increasing quantities.

British forces in Iran and India rushed preparations to aid the Russians in the defense of the vital Caucasus oil fields, but the British Government rejected a Russian appeal for the opening of another front in Western Europe to relieve German pressure on the Soviet forces. During October and November, Leftist elements in Britain raised a growing clamor for a British invasion of the Continent as an aid to Russia. Government spokesmen and military experts pointed out that Britain had neither the ships, the arms, nor the men to undertake such a hazardous operation from the British Isles. But the clamor continued until the beginning of the British drive in Libya late in November fulfilled in part the appeal for a British diversion.

The Churchill Government fulfilled another Soviet demand by declaring war on Finland, Rumania, and Hungary on December 6, after first warning them to cease hostilities against the Soviet Union. The British repeatedly complained, however, that the Soviet Government refused to permit members of the British military mission in Moscow free access to the front. The Soviet Government, in its turn, declined to enter the war against Japan in December, although Russian air bases at Vladivostok offered the best hope for bombing Japanese cities and bringing the war in the Far East to an early conclusion. When the Red Army in December commenced its successful counter-offensives against the Germans, Soviet spokesmen tended to discount the British contribution to the weakening of German military power. Thus the stage was set for a renewal of Soviet-British antagonism once Germany's power began to disintegrate. To forestall greater dissension, Foreign Minister Eden went to Moscow in mid-December for "an exhaustive exchange of views on questions relating to the conduct of the war and to postwar organization of peace and security in Europe." A "full agreement" on these questions was reported Dec. 27, 1941.

Aid from United States. In contrast to the marriage of convenience with the Soviet Union, British relations with the United States became progressively closer. The Roosevelt Administration during the year threw America's political and economic weight increasingly on the side of Britain and her allies. The Japanese attack of December 7 and the subsequent German and Italian declarations of war upon the United States brought that country into full participation in the armed struggle. When Bulgaria declared war upon the United States, Britain immediately declared war on Bulgaria (December 13).

On March 8 the U.S. Congress gave final assent to the Lease-Lend Act, authorizing President Roosevelt to transfer American-made or government-owned war materials to Great Britain or its allies, and providing a method for financing further British war orders in the United States after existing credit facilities had been exhausted. It was hailed by Prime Minister Churchill, before a cheering House of Commons, as "a new Magna Carta . . . a monument of generous and far-seeing statesmanship." This was followed by an increasing flow of American tanks, planes, foodstuffs, and other supplies to the British Isles and the Middle East war fronts.

The final agreement for the leasing by the United States of naval and air bases in British possessions in the Western Hemisphere was signed in London March 27. Leases covering the individual sites were signed at the same time, with certain exceptions (for provisions, see ANTIGUA, BAHAMAS, BERMUDA, BRITISH GUIANA, JAMAICA, NEWFOUNDLAND, ST. LUCIA, and TRINIDAD, under *History*). On July 7 American forces joined in the military occupation of Iceland (q.v.), and subsequently the U.S. navy and air force began to assist the British in keeping the Atlantic sealanes as far as Iceland clear of German raiders and submarines.

Churchill-Roosevelt Meeting. After a secret crossing of the Atlantic, Prime Minister Churchill met President Roosevelt for a three-day conference on warships off the coast of Newfoundland early in August. Both statesmen were accompanied by high officials of their Governments and high-ranking officers of their military, naval, and air services. According to a statement issued in London and Washington on August 14 "the whole problem of the supply of munitions of war, as provided by the Lease-Lend Act, for the armed forces of the United States and for those countries actively engaged in resisting aggression has been further examined." The statement included a joint declaration drawn up by Churchill and Roosevelt "to make known certain common principles in the national policies of their respective countries on which they base their hopes for a better future for the world." This soon became known as the Atlantic Declaration (for text, see ATLANTIC DECLARATION).

Lease-Lend Problems. Following this conference, Lord Beaverbrook, British Minister of Supply, proceeded to Washington to work out further details of the supply problems of both Great Britain and the Soviet Union with American officials. His visit paved the way for the joint Anglo-American economic mission to Moscow in September-October. Meanwhile in September some British newspapers began to complain of the inadequacy of American assistance reaching Britain under the lease-lend program. At the same time some American exporters charged that Britain was maintaining her export markets in Latin America with the help of materials supplied under the Lease-Lend Act.

An agreement adjusting Anglo-American commercial relationships to the lease-lend program was signed by the two Governments early in September and announced in Washington and London September 10. The British statement denied that lease-lend materials were used for export and promised that they would not be so used in the future, "subject to the principle that where complete segregation of lend-lease materials is impracticable, domestic consumption of the material in question shall be at least equal to the amounts received under lend-lease."

In the agreement the U.S. Government accepted the principle that British exports should be maintained at about two-thirds of their normal level in order to provide dollar exchange for essential purchases of materials not obtainable in the United States. Negotiations on a program for postwar settlement of Britain's lease-lend obligations were reported in November. In this connection it was stated that substantial progress had been made toward an agreement on broad economic principles to be followed by the two countries after the war.

British complaints as to the inadequacy of lease-lend shipments died down as the flow of these commodities and supplies steadily increased. By October food shipments to Britain reached 20,000,-

000 lb. valued at \$2,000,000 daily. The Minister of Food stated October 8 that Britain planned to rely upon lease-lend food shipments for 25 per cent of its total food supply. Besides the rapidly increasing production of American tanks, planes, and other war equipment, the lease-lend program provided Britain and her Allies with new merchant and naval shipping; gasoline and oil; American facilities for repairing, outfitting, and arming merchant and naval ships; technical assistance in the operation and maintenance of tools from American factories; plane ferry services across the United States and to Egypt via the South Atlantic; facilities for the training in the United States of thousands of British pilots; etc. American engineers, technicians, and materials were allocated for the construction of supply bases and improved transportation facilities in Egypt, Iraq, Iran, and other parts of the Middle East. In Northern Ireland naval and air base facilities were constructed by American workmen.

In addition to the lease-lend aid, the United States also extended direct financial assistance through a \$425,000,000 Reconstruction Finance Corp. loan, authorized July 22, against British-owned securities on deposit with the Federal Reserve Bank of New York. This helped London to pay for war supplies contracted for in the United States prior to the enactment of the Lease-Lend Act.

Armed Collaboration. During the autumn months the United States extended a growing measure of naval and air aid to the British in the Battle of the Atlantic (see UNITED STATES; WORLD WAR). Following the entrance of the United States into declared warfare, arrangements for closer armed collaboration on all fronts were quickly made. Prime Minister Churchill, accompanied by a large staff of experts, and by Lord Beaverbrook, Minister of Supply, arrived in Washington December 22 to join with President Roosevelt and American experts in establishing unity of action by all anti-Axis military forces. In a historic address before both houses of the American Congress on December 26, Churchill warned that the anti-Axis forces would not be ready to undertake a world-wide offensive until 1943. Representatives of the British dominions, China, the Soviet Union and other allied and associated powers participated in the discussions. Similar conferences were held at the same time in Moscow and Chungking.

Allied Agreements. The liaison program laid down at Washington supplemented the political accords concluded by the British and other Allied governments earlier in the year. On June 12 representatives of 14 Allied governments met in St. James's Palace, London, and signed the following resolution:

The Governments of the United Kingdom of Great Britain and Northern Ireland, Canada, Australia, New Zealand, South Africa, the Government of Belgium, the Provisional Government of Czechoslovakia, the Governments of Greece, Luxemburg, the Netherlands, Norway, Poland, and Yugoslavia, and the representatives of General de Gaulle, leader of Free Frenchmen, engaged together in the fight against aggression, are resolved:

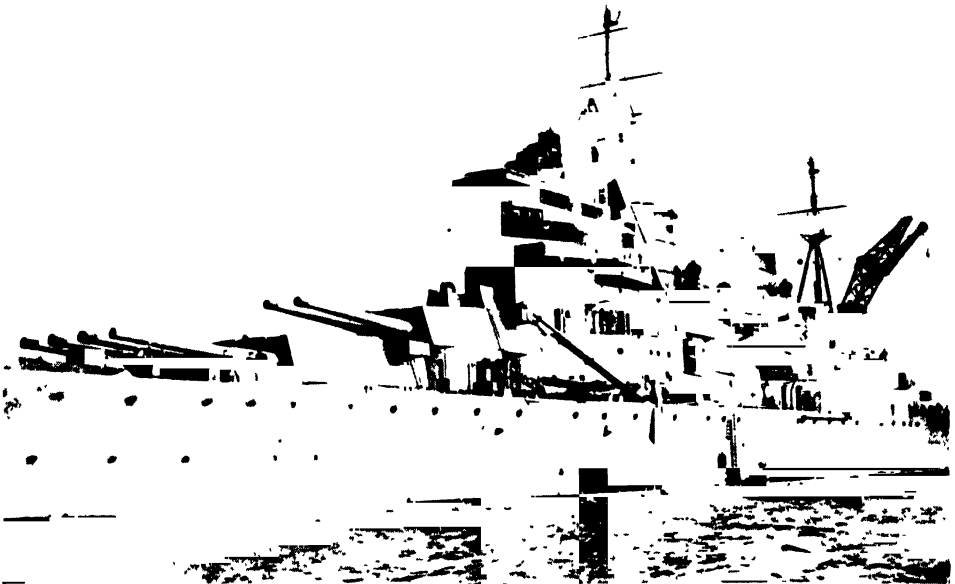
1 That they will continue the struggle against German or Italian aggression until victory has been won and they will mutually assist each other in this struggle to the utmost of their respective capacities;

2. There can be no settled peace and prosperity so long as free peoples are coerced by violence into submission to domination by Germany or her associates or live under the threat of such coercion;

3 That the only true basis for enduring peace is the willing cooperation of the free peoples in the world in which, relieved of the menace of aggression, all may enjoy economic and social security; and that it is their intention to work together with other free peoples both in war and peace to this end.



I A P



Press Association

THE ATLANTIC DECLARATION was formulated by President Roosevelt and Prime Minister Churchill in conferences on the high seas in August. Left to right behind the leaders, in informal discussion, are shown U.S. Lend-Lease Administrator Hopkins and Admirals King and Stark.

H.M.S. PRINCE OF WALES, 35,000-ton British battleship, completed in 1940, was the scene of the conferences. The *Prince of Wales* arrived in Singapore, December 2, as flagship of Britain's new Far East Fleet and was sunk by Japanese air attack one week later.

**IN THE CAPITALS OF THE
TWO GREAT DEMOCRATIC ALLIES**



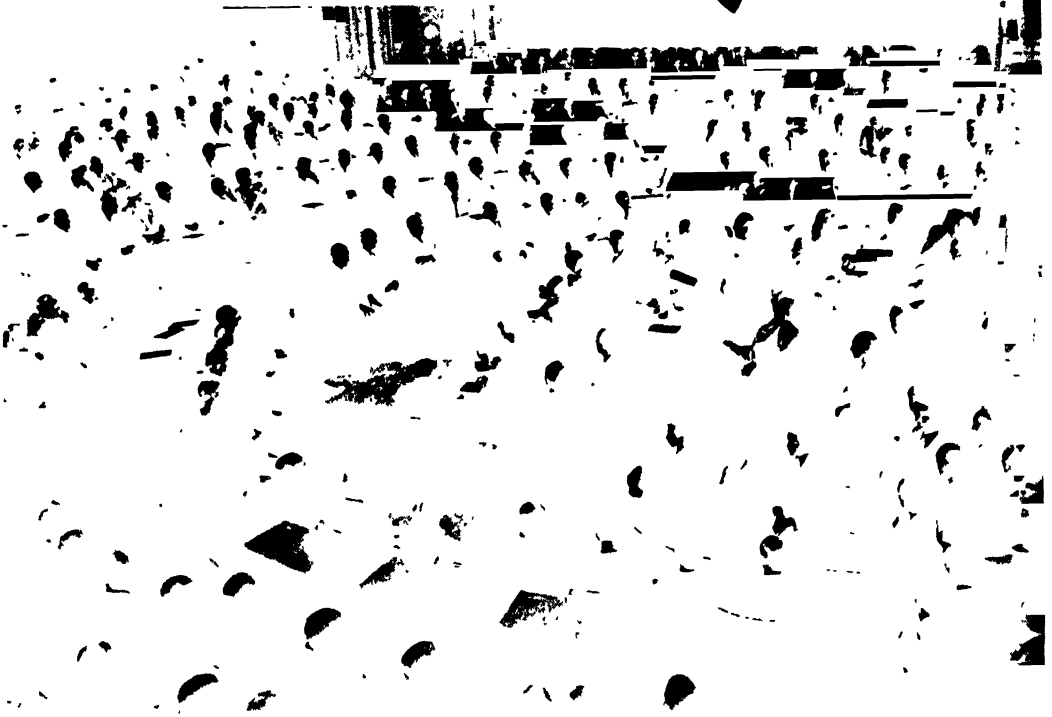
Looking toward the Speaker's Chair in the British House of Commons (left) after German air raids on the night of May 10

Wide World

Wide World



British Prime Minister Winston Churchill (right) promised the Axis a lesson the world "will never forget" in an address to a joint session of the United States Congress in the Senate Chamber (below) December 26



Press Association

Another meeting of representatives of the 11 Allied Governments took place in the same hall on September 24, at which two resolutions were adopted. One announced the adherence of the Allies "to the common principles of policy" set forth in the Roosevelt-Churchill Atlantic Declaration and their intention to cooperate to the best of their ability in making them effective. The other resolution provided for cooperation in planning and executing the mutual economic rehabilitation of the Allied peoples after the war. To this end, the Allied Governments and authorities were requested to prepare estimates of the kinds and amounts of foodstuffs, raw materials and other necessities required and to indicate the order of priority in which they would desire supplies to be delivered. Similar planning was requested for the unified control of Allied shipping resources in reprovioning Europe.

To carry on these preparations, the British Government was asked to establish a bureau with which the other Allied Governments and authorities could collaborate. After collating estimates of requirements submitted by the various Governments, the bureau was to present recommendations for final consideration to a committee of Allied representatives under the chairmanship of Sir Frederick Leith-Ross. At the same meeting the Soviet Ambassador announced his Government's "agreement with the fundamental principles of the declaration of Mr. Roosevelt and Mr. Churchill."

Meanwhile the British Government assisted all of the Allied Governments and military forces financially and otherwise. They, in turn, contributed growing military aid against the Axis. Important financial-economic accords were concluded with the Netherland and Belgian Governments and with the Free French movement covering French Equatorial Africa, Belgian Congo, and the Netherlands Indies. Similar financial and economic support was extended to Britain's nonbelligerent allies, such as Egypt, Turkey, and Portugal. Additional financial and military assistance was extended to China to strengthen that country in its struggle with Japan. To keep Spain neutral, the British Government on June 20 signed a new agreement permitting shipment of large quantities of petroleum products through the blockade to Spain. See each of the above countries, under *History*.

Relations with Japan. In the Far East the British Government collaborated closely with Washington in trying to check Japan's southward expansion without forcing a showdown. This policy failed. When the Japanese took over all of French Indo-China late in July, London followed Washington's lead in freezing Japanese funds within the Empire, and denouncing the Anglo-Japanese, Indian-Japanese, and Burmese-Japanese trade agreements. Subsequently plans were laid by the British, American, Netherlands, Australian, New Zealand, and Chinese military and political authorities in the Far East for joint action in the event of Japanese aggression. These plans were put into effect when war came in December.

On November 10, Prime Minister Churchill stated that if war broke out between Japan and the United States, Britain would declare war on Japan "within the hour." On December 7 the Japanese attacked both British and American bases almost simultaneously. The following day the British Cabinet authorized a declaration of war on Japan without awaiting the action of the American Congress. This was followed on December 19 by the appointment of Alfred Duff Cooper as Resident Minister

for Far Eastern Affairs, with authority to preside over the Allied war council in Singapore. Establishment of an American-British-Chinese military council for joint prosecution of the war in the Pacific was announced in Chungking, December 26.

Empire Relations. Throughout the year the British dominions and colonies contributed a rapidly growing measure of support in all fields of war activity. The Empire Air Training Scheme was in considerable part responsible for the rapid expansion of the R.A.F. to a position of equality with the German Luftwaffe. Indian, Australian, and New Zealand troops played a prominent part in the campaigns in Greece, the Middle East, and Malaya. South African forces helped to liquidate the Italian empire in East Africa and then joined in the Libyan offensive of November-December. Canada and Newfoundland sent more land and air contingents to the British Isles, and a Canadian brigade participated in the defense of Hong Kong. All of the Dominions rapidly increased their production of war material, and became invaluable bases of supply for the widely scattered fighting fronts. The British Government contributed not only to the common defense of the Dominions, but also extended financial and economic support for the adjustment of their economies to war conditions.

Difficulties of coordinating the war policies of Britain and the Dominion Governments gave rise to a demand in some influential quarters for the creation of an Imperial War Cabinet. Such a body was opposed by the Canadian Prime Minister, and it was rejected in favor of the improvement of existing liaison arrangements. The Prime Ministers of Australia, New Zealand, and Canada visited London during the year for conferences with British officials. The Australian Government appointed a Minister with Cabinet rank as its representative in London, and obtained political as well as military representation in Singapore. Both Australia and Canada demanded separate representation on the Allied war strategy and control board established at Washington late in December.

India remained a sore spot in Empire relations, as the All-India National Congress continued to withhold its cooperation in the prosecution of the war. However a modification of its attitude was indicated in December as a result of the Japanese invasion of British Malaya. The colonies everywhere continued to display the steadfast loyalty manifested upon the outbreak of the struggle. See each Dominion and colony under *History*.

The Home Front. Some of the most crucial dangers of the war were successfully overcome by hard work and dangerous fighting on the home front. The German attempt to disrupt Britain's economic life by mass air raids on its cities, factories, and communications was beaten off. A similar fate befell the enemy effort to sever Britain's sea communications and starve it into capitulation. The problems of mobilizing British industry for greatly increased production of war materials, and of meeting the rapidly rising financial burden of the war without bringing on uncontrolled inflation were all met with a considerable measure of success. But it was only after anxious months that the nation was able to feel that each of these crucial problems was in process of solution.

Bombing Raids. German night air raids upon British cities increased in extent and ferocity during the first months of 1941. From January through May London suffered frequent heavy bombings. Particularly heavy raids on the nights of April 16 and May 10 did great damage to some of the city's most historic and treasured buildings. St. Paul's

Cathedral, Westminster Abbey, the House of Commons, Westminster Hall, the British Museum, and Queen's Hall were badly damaged or destroyed.

Meanwhile German bombers repeatedly attacked the other great cities that had been left relatively untouched during 1940. Cardiff, Bristol, Portsmouth, Hull, Glasgow, Liverpool, Plymouth, Belfast in Northern Ireland, and many other cities and towns suffered extensive damage. These raids forced the Government to institute compulsory service in civil defense services; to reorganize the kingdom's 1,400 fire brigades into less than 50 regiments under a general staff officer; to improve shelters, community feeding canteens, and temporary housing; and to reorganize and extend numerous emergency agencies. But although the civilian casualties from air raids mounted to a total of 41,488 dead and 53,498 wounded by June 30, 1941, the morale of the British people remained unshaken. Property damage in Great Britain from air raids during the first two years of the war was estimated by the London *Economist* at \$480,000,000, or only some 2 per cent of the estimated real estate value. During the latter half of 1941 improved British defenses against night bombing and the large-scale diversion of German planes to Russia and Libya brought welcome relief to Britain's badly mauled cities. Nevertheless preparations were made to meet the anticipated renewal of Nazi raids.

Shipping Crisis. An even more crucial danger was presented by the rapid rise in sinkings of British and Allied shipping by German submarines, surface raiders, and long-range aircraft during the first part of the year. On May 27 President Roosevelt pointed out that "the present rate of Nazi sinkings of merchant ships is more than three times as high as the capacity of British shipyards to replace them; it is more than twice the combined British and American output of merchant ships today." For the four months ended with June, Britain's shipping losses totaled more than 2,000,000 tons. Then counter-measures against the Axis raiders and naval-air help from the United States began to show results. Shipping losses declined steadily to less than 750,000 tons for the four months ended in October. This fact, combined with the rapid increase in the output of American and British shipyards, aroused confidence that the German sea threat was definitely waning.

Food Situation. The victory won in the Battle of the Atlantic was accompanied by a steady improvement in the food situation, which became difficult during the spring months. The Ministry of Food progressively tightened its rationing regulations during the first half of 1941. Rations of the armed forces were reduced to approximately the civilian level on March 1. In February the Government ordered that no restaurant might serve more than one main dish and one subsidiary dish, or two subsidiary dishes, at one meal. In May cheese was placed on the rationed list and the Government began to limit distribution of milk and eggs, and to control the price of fish. The rationing of clothing was introduced June 2.

At the end of May the first ship bearing American foodstuffs under the lease-lend program docked at a British port. Thereafter an increasing inflow of food from the United States, coupled with the expansion of British foodstuffs production, reversed the trend toward an acute food shortage. On September 14 the Minister of Food announced that Britain was better situated with regard to food than any country in Europe and that increased rations were possible. Fat and sugar rations were increased on November 17.

The rise in food prices, amounting to 23 per cent between September, 1939, and July, 1941, made it difficult for many to buy their full rations. To keep down prices of essential foods, the Food Ministry subsidized wheat, milk, and meat producers at a cost of some £100,000,000 annually and launched a determined drive against hoarding, speculating, and profiteering in foodstuffs. Prosecutions of such offenders totaled 2,300 in April. Workers engaged in heavy labor were able to supplement their rations through the establishment by the Government of special restaurants and canteens.

War Production and Conscription. Despite the handicaps imposed by blackouts and damage from air raids, British industry made steady and in some cases striking progress in the production of arms and war supplies. Notwithstanding the increasing flow of planes, tanks, artillery, and munitions from British factories, the British forces suffered defeats and excessive casualties in Greece, Crete, and Libya for lack of sufficient equipment. The Government was severely criticized in Parliament for its failure to speed up the nation's economic mobilization for total war, and this criticism continued as the new demands for equipment in Russia and then in Malaya imposed further burdens upon the war industries. In response to these criticisms, the Government proceeded gradually to extend its control over the entire national economy, to curtail production and consumption of nonessential commodities for civilian use, and forcibly to transfer both factories and workers from civilian to war production.

On March 4 the Government inaugurated its "concentration of production" plan under which some 90 separate industries, engaged in production of commodities for civilian use, were obliged to restrict operations to certain "nucleus firms," thus freeing the remaining factories and labor supply for war production. The compulsory registration for labor service of all adult males and females not in military service was begun in April. Meanwhile Minister of Labor Bevin had issued an order enabling him to forbid shifts of labor within certain essential industries.

On December 2 Prime Minister Churchill asked the House of Commons for authority to draft 3,000,000 more men for military duty and to require women to serve in the uniformed services. He declared that "the crisis of equipment" was almost over and that the "crisis of man power and woman power" would dominate 1942. Immediately afterward Minister of Labor Bevin introduced the most drastic conscription bill ever advanced by a democratic government, making every man and woman between 18½ and 51 years of age liable to national service in the armed forces, civilian defense, industry, or elsewhere at the Government's discretion. The measure passed by an overwhelming majority, and provision was made for calling up the first class of women conscripts on Jan. 10, 1942.

Finance Policy. In addition to meeting the deficit caused by rapidly mounting war expenditures, the Treasury faced the problem of siphoning off increased civilian purchasing power resulting from Government spending, checking competition between civilian consumption and the war machine, and curbing the inflationary price-wage spiral. This the Chancellor of the Exchequer sought to do in the 1941-42 budget bill, introduced April 7. The basic income tax rate was raised from 42.5 to 50 per cent, and a program of compulsory savings was introduced (see *Finance*). These measures, however, failed to eliminate excess purchasing power. The cost of living continued to rise, operations of illegal markets expanded, and increases in

wages awarded agricultural, shipbuilding, and engineering workers late in the year endangered the Government's entire price stabilization program.

Political Developments. Prime Minister Churchill remained the dominant figure and the main driving force behind his Government throughout 1941. Public opinion polls recorded only a slight decline in his overwhelming public support from the peak level reached during the crisis of the summer of 1940. The Government coalition retained its overwhelming control in Parliament. However the political truce arranged among the Government parties in 1940 began gradually to wear thin. Criticism of the Government in Parliament came from a widening front, while independent candidates began to poll more votes in by-elections.

There was constant and severe criticism of Cabinet Ministers, accompanied by several reorganizations of the Government (see under *Government* for changes announced February 8). On May 2 Lord Beaverbrook, at his own request, turned over the Ministry of Aircraft Production to Colonel Moore-Brabazon, Minister of Transport. The latter office was merged with the Ministry of Shipping and given to F. J. Leathers. Lord Beaverbrook remained Minister of State until June 29 when he replaced Sir Andrew Rae Duncan as Minister of Supply. Duncan succeeded Capt. Oliver Lyttleton as President of the Board of Trade. Lyttleton was assigned to special political duties in the Middle East. On July 20 Churchill's parliamentary private secretary, Brendon Bracken, was appointed Minister of Information in place of the much-criticized Alfred Duff Cooper, who, as Chancellor of the Duchy of Lancaster, was sent to the Far East to coordinate Empire and Allied political defense preparations. These changes, however, failed to check the vigorous parliamentary criticism of the Government's internal and foreign policies.

The annual conventions of both the Labor party and the allied Trades Union Congress voted overwhelmingly to prosecute the war to total victory. The Labor party, convening early in June before the outbreak of the Russo-German war, emphatically repudiated the campaign for a compromise peace then sponsored by the British Communist party and like-minded radicals. The British Communists effected the complete reversal of their party line with the same alacrity as Stalmists in other countries after June 22. Their subsequent anxious cooperation in the struggle against the Axis failed to bring withdrawal of the Government's ban on the party's official journal, *The Daily Worker*, and a pro-Communist newsletter, *The Week*, both of which Home Secretary Herbert Morrison suspended on January 21 for persistent opposition to the national war effort. On October 2 Morrison again reiterated the Government's view that the British "Communist party is not loyal to this country."

See **AFGHANISTAN, ARABIA, ARGENTINA, AUSTRALIA, BELGIUM, BRITISH MALAYA, BULGARIA, CANADA, CHINA, CZECHOSLOVAKIA, EGYPT, EIRE, ESTONIA, FINLAND, FRENCH INDO-CHINA, GERMANY, GREECE, IRAQ, ITALIAN EAST AFRICA, ITALY, JAPAN, LATVIA, LITHUANIA, NETHERLANDS, NEW ZEALAND, NORWAY, POLAND, SOUTH AFRICA, SPAIN, SWEDEN, SYRIA, UNION OF SOVIET SOCIALIST REPUBLICS, VENEZUELA, YUGOSLAVIA**, under *History*; **UNITED STATES** under *Foreign Affairs*; **ARCHITECTURE; BANKS AND BANKING, BIRTH CONTROL; CHEMISTRY, INDUSTRIAL; DAIRYING; LABOR CONDITIONS** under *Employment*, etc.; **LEND-LEASE ADMINISTRATION; LIVESTOCK; MUSIC; NAVAL PROGRESS; NEWSPAPERS AND MAGAZINES; PORTS AND**

HARBORS; PSYCHIATRY; RAPID TRANSIT; ROMAN CATHOLIC CHURCH; SOCIALISM; THEATER under *England*; **WATERWAYS, INLAND; WORLD WAR.**

GREECE. A Balkan kingdom, occupied by German and Italian troops in April-May, 1941. Capital, Athens. Greece has an area of 50,147 square miles (mainland, 41,328; islands, 8,819). The population was estimated at 7,108,000 on Jan. 1, 1939, as against 6,204,684 at the 1928 census. Living births in 1939 numbered approximately 168,200 (23.5 per 1,000); deaths, about 92,800 (13.0 per 1,000); marriages in 1937 totaled 45,833 (6.6 per 1,000). Estimated populations of the chief cities in 1939 were: Athens, 392,781; Piraeus, 198,771; Salonika (Thessaloniki), 236,524, Patras, 61,278; Kavalla, 49,980; Canea, 26,608, Corfu (Kerkyra), 32,221.

Religion and Education. School attendance in 1936-37 was: Elementary, 967,588, secondary, 90,709; university, 10,561. The American-founded Athens College, with a normal enrollment of 500, was closed by order of the Greek Government in October, 1940. Illiteracy is high. The 1928 census returns showed 5,961,529 members of the Greek Orthodox Church, 126,017 Moslems, 72,791 Jews, 35,182 Roman Catholics, and 9,003 Protestants.

Production. Previous to Greece's involvement in the European War, approximately 54 per cent of the working population were supported by agriculture and fishing, 16 per cent by industry, and 8 per cent by commerce. Estimated yields of the chief crops in 1940 were (in metric tons): Tobacco, the main cash crop, 48,900; wheat, 896,000; currants, 121,775; raisins, 23,000; figs (exportable crop), 22,000; barley, 239,500; oats, 174,200; rye, 57,900; olive oil, 105,000. Other production in 1939 was (in metric tons): Ginned cotton, 13,600; potatoes, 163,300; corn, 261,500; wine, 5,000,000 hectoliters in 1938. Livestock in 1938 included 8,138,772 sheep, 967,322 cattle, 4,356,120 goats, 429,748 swine, 363,083 horses, 183,619 mules, and 404,379 asses.

Factory production in 1938 (excluding wine, olive oil, and wheat products) was valued at 13,552,000,000 drachmas. In 1939, 318 metric tons of rayon were produced; silk production in 1938 totaled 250 metric tons. Mineral output (in metric tons) in 1938 except as otherwise indicated was: Iron ore, 165,000, pyrites, 120,000; bauxite, 179,900; sulphuric acid, 43,000; chrome ore, 19,900 (1937); zinc, 10,900 (1937); lead (smelter), 9,200 (1937); lignite, 131,000 (1937); nickel, 1,000 (1937).

Foreign Trade. Imports in 1940 were valued at 12,215,326,000 drachmas (12,275,404,000 in 1939); exports, 9,079,380,000 (9,199,867,000 in 1939). Volume of imports, 1,450,102 metric tons in 1940 (2,483,646 in 1939); exports, 498,816 tons in 1940 (1,256,719 in 1939). Germany in 1940 maintained its leading position as a market and source of supply, taking 3,430,562,000 drachmas worth of exports (2,531,969,000 in 1939) and furnishing 2,871,301,000 drachmas of imports (3,674,423,000 in 1939). The United States in 1940 was second as a market for Greek exports, taking 2,273,842,000 drachmas worth, and third (preceded by Rumania) as a supplier of Greek imports, furnishing 1,389,253,000 drachmas worth. See **TRADE, FOREIGN.**

Finance. As revised after the outbreak of war with Italy on Oct. 28, 1940, budget estimates for the fiscal year ended Mar. 31, 1941, anticipated receipts of 15,030,341,000 drachmas and expenditures of 19,143,603,000 drachmas. Military expenses (excluding naval appropriations) totaled 6,471,000,000 drachmas. The public debt on Sept. 30, 1940, was 95,000,000,000 drachmas (85,000,000,-

000 on Sept. 30, 1939). Interest payments on the foreign debt were raised to 43 per cent from 40 per cent of the contractual interest rate by an agreement reached in London in January, 1940. The average annual exchange rate of the drachma was \$0.0090 in 1938 and \$0.0082 in 1939. The official selling rate was fixed at the equivalent of \$0.0066 on June 12, 1940.

Transportation. In 1940 Greece had approximately 1,864 miles of railways, 8,440 miles of highways, air connections from Athens to most of the principal European cities, and a merchant fleet of some 607 vessels (of 100 tons or over) aggregating about 1,780,700 gross tons. Much of the transportation and communication network was disrupted or destroyed by the Italo-German invasion of 1940-41. Half the merchant marine was destroyed or captured at the same time. The remainder (about 200 ships of 1,000,000 tons manned by 6,000 sailors) entered the service of the Allies under British direction.

Government. Premier John Metaxas administered Greece as a dictatorship from Aug. 4, 1936, until his death on Jan. 29, 1941. The government remained a monarchy in form, under King George II, who had been restored to the throne Nov. 25, 1935, in accordance with a plebiscite, to rule under the constitution of 1911. King George signed the 1936 decrees which suspended constitutional guarantees, dissolved Parliament, abolished political parties, and imposed strict control over the press and other means of communication. Thereafter, all legislation was enacted by royal decree. Premier Metaxas had indicated his intention of transforming Greece into a corporative state on the Italian model, with modifications to meet Greek conditions. For 1941 developments, see *History*.

HISTORY

Death of Metaxas. While Greece was still engaged in its epic struggle with Italy, initiated by the Italian invasion of Oct. 28, 1940 (see *YEAR BOOK* for 1940), Premier Metaxas died from an abscess of the throat on Jan. 29, 1941. Unpopular as a peacetime dictator, he had won the admiration and respect of Greeks of all political factions by his unflinching courage in the face of the Italian threat, and by his brilliant military strategy, credited in large measure for the success of the Greeks in driving the invading Italians back into Albania. The Premier's body, after lying in state in Athens Cathedral, was buried on January 31 while half the population of Athens stood hatless in an impressive demonstration of national unity.

The Korizis Cabinet. Immediately after the death of Metaxas, King George summoned an emergency Crown Council and appointed Alexander Korizis, Governor of the National Bank and long a close collaborator with the dead Premier, as head of a new Cabinet. Besides the Premiership, Korizis reserved for himself the posts of Foreign Affairs, Education, War, Marine, and Air. The Premier announced that his Government would resolutely continue the Metaxas program "whose initial point is victory against the enemy, and whose subsidiary aim is the benefiting of the working classes which compose the productive element of the nation." King George issued a proclamation giving the nation similar assurances. The war against the Italians in Albania was carried forward vigorously and successfully until German military intervention on April 6 transformed a hitherto victorious campaign into crushing defeat. See *WORLD WAR* for a full description of military developments.

Greeks Resist German Pressure. Before unleashing

his military machine against the Greeks, Reichsfuehrer Hitler exerted every effort to induce them to make peace with Italy, repudiate the British guarantee of Greece's territorial integrity, and peacefully accept a new role as a satellite of the Axis powers. Although backed up with repeated threats of an overwhelming military onslaught, this effort failed completely.

With Bulgaria's capitulation to German pressure on March 1, Nazi forces took up positions along the Greek-Bulgarian frontier ready for a drive against Salonika. Yugoslavia and Turkey, from whom the Greeks had expected military aid in the event of a German offensive, both showed signs of wavering. British forces in Greece at that time consisted of only a small air contingent, with ground crews and troops for the protection of air fields. British aid to Greece against Italy had been deliberately restricted by the Greeks in order not to provoke Hitler unduly. But despite these circumstances, the leaders of the Greek Government and army firmly rejected a separate peace with Italy. They decided to fight to the end against any aggression from Germany, whether or not Greece received aid from Britain or other potential allies.

This decision was made known to a British mission headed by Foreign Secretary Eden and Gen. Sir John G. Dill, Chief of the Imperial General Staff, which visited Athens on March 2-5. It was formally proclaimed by Premier Korizis on March 10. On the basis of this decision, the British agreed to send an expeditionary force to aid in the defense of Greece and to increase shipments of munitions and supplies for the use of the Greek armies. British and Dominion troops withdrawn from Libya began to arrive in Greece toward the end of March. However Turkey, despite close ties with Greece and an alliance with Britain, refused to give military aid in the event of a German attack. The Yugoslav Government on March 26 adhered to the Axis alliance and agreed to permit the transport of munitions across Yugoslav railways for the use of German forces in Bulgaria. Only two days before Athens authorities had announced that "Greece would consider the acceptance of such demands (by Yugoslavia) as an act abolishing all meaning of Yugoslav neutrality and at the same time hostile toward her (Greece)."

This move on the part of the Belgrade Government made the prospect of successful resistance even less than before. The news of the anti-German coup of March 27 in Belgrade consequently was received with the wildest joy in Athens. Thereafter the Greeks awaited the German attack with increased confidence. When it came at dawn on April 6, the Greeks rallied to the defense of their country with patriotic fervor.

Some 15 minutes after the Germans attacked the Greek fortifications along the Thracian frontier, the German Minister in Athens presented a note to the Greek Government. On the basis of documents alleged to have been found by the Germans at La Charité in France, the note accused the Athens authorities of secretly pursuing an unneutral policy toward Germany since the outbreak of the war. More recently, it stated, the Greek Government had allowed its territory to "become an operations area of English fighting forces." Consequently the German Government had ordered its forces to drive the British from Greece and to crush any opposition ruthlessly. The note asserted that the attack was aimed at Britain rather than Greece, and that Germany was "rendering an important service to the people of Greece and to the European community" in "expelling the British intruders."

The Nazi Conquest. The German invasion brought immediate and unmitigated tragedy to the Greek nation. On the first night of the attack, an air raid on the port of Piraeus set fire to a ship laden with munitions. According to a subsequent German report, the explosion destroyed 17 steamships in the harbor, wrecked port facilities valued at \$10,000,000, and caused extensive damage throughout the city. The port of Salonika was devastated by Greek and British engineers upon the Allied evacuation to lessen its usefulness to the Germans. Many other Greek cities were ruined or badly damaged by German air raids during the three-weeks' campaign and the evacuation of the British expeditionary force. Athens, however, was spared this fate, possibly due to a British threat to bomb Rome if Athens was attacked.

The unexpected Yugoslav military collapse exposed the flank of the Greek army in Albania, just as it had completed preparations for a new offensive against the Italians. The Army of the Epirus was forced to withdraw without fighting from all the Albanian territory it had won at the cost of much bloodshed and heavy sacrifice during five months of warfare. The withdrawal was carried out in good order, but the rapid German advance to Janina and Metsovo Pass cut off the Army of the Epirus and Macedonia from the Greek and British armies in central and eastern Greece. On April 21 the High Command of the surrounded forces asked Germany's terms and on April 23 a surrender convention was concluded by Gen. George Tsolakoglou with the German and Italian commanders.

Even after the surrender of the Army of the Epirus and Macedonia, other Greek forces continued the hopeless fight alongside the British rearguard to permit the evacuation of the bulk of the British and some Greek forces to Crete. As the defeated British and Dominion troops marched through Athens en route to their ships, the Athenians lustily cheered them and women and girls threw garlands of spring flowers at them in a gesture of defiance to the approaching invaders. On April 27 German armored forces entered the city and within a few days all of Greece except the island of Crete was in the hands of the Axis powers.

The Governmental Crisis. The early stages of the military catastrophe produced a governmental crisis in Athens in which the seizure of power by persons favoring immediate surrender was narrowly averted. The collapse of Yugoslavia spread defeatism and gloom among some members of the Korizis Cabinet. It was reported that anti-Axis posters and proclamations in Athens were hurriedly taken down. The censors banned unfavorable references to the Reich. The War Minister ordered a long leave for soldiers waiting to join the armies in the field. On the night of April 17 an official radio broadcast prematurely declared that Greek resistance had collapsed. Following an alarming report from the Greek commander-in-chief, Gen. Alexander Papagos, Premier Korizis committed suicide on April 18. A number of American war correspondents fled Athens, fearing immediate establishment of a pro-German Government which would betray the British expeditionary force and other anti-Axis elements into the hands of the invaders.

This expectation was frustrated by the firmness of King George and some of his associates and by the steadfastness of the Greek people, who rejected all talk of surrender. On the day of the Premier's death, there was a spontaneous demonstration in Athens for continuance of the war. Young men who had been told they were no longer needed for military service thronged the army headquarters de-

manding rifles. Although most of the Greek generals in the field were said to favor capitulation, the King received firm support from unexpected sources in his decision to fight on to the last.

On April 19 King George personally assumed both the Premiership and supreme command of the army to insure the greatest possible national unity behind his policy of resistance. He called on Kostas Kotziias, former Mayor of Athens, to accept the Vice Premiership. Kotziias, despite his previously well-known pro-German sympathies, supported the King's policy. However he advised the formation of a military government with the key positions in the hands of army and navy leaders willing to continue the struggle.

Accordingly Vice Admiral Alexander Sakellariou was summoned from his post as Chief of the Naval General Staff to accept the Vice Premiership and the Navy portfolio. Other leading offices were filled as follows: War, Major Gen. Panayot Panagakos, Air, Major Gen. P. Nikolaides, Communications and Railways, Major Gen. G. Korzas, Foreign Affairs, Finance and National Economy, Emmanuel Tsouderos, Interior and Public Security, Constantine Maniadakis, a holdover from the Metaxas and Korizis Governments.

The new Cabinet was sworn in on the afternoon of April 20. That evening the King in a radio broadcast announced the new military dictatorship, which he described as temporary, and called upon the Greek army and people to "continue the fight to the end." The next day the King relinquished the Premiership to the new Minister of Foreign Affairs and Finance, Emmanuel Tsouderos, a staunchly pro-British Venizelist and former leading opponent of the Metaxas dictatorship. Tsouderos retained Constantine Maniadakis as Minister of Security, even though the latter had sent him into exile less than a year before. Thus the most irreconcilable political enemies and men who had opposed war in the beginning united behind the King. On the evening of April 21 a 9 p.m. curfew was imposed in Athens to curb fifth column activities.

Last Stand in Crete. With the Germans advancing steadily toward Athens, the King and Government on April 22 fled by ship to Candia in the British-defended island of Crete. They left with a pledge to the Greek people to "fight on until final victory."

When the German air invasion of Crete began on the early morning of May 20, parachutists made a special effort to capture King George and Premier Tsouderos. However they and other members of the Government escaped, made their way to the southern coast, and were taken off by a British warship on the night of May 23. Crete was devastated even more than the Greek mainland in the terrific German air assault. Candia, Canea, and the other principal cities and towns were reported to have been reduced to rubble.

Government-in-Exile. At Cairo, Egypt, where the Greek Government was temporarily established, the Cabinet was reorganized on June 2 and reduced to five members. Premier Tsouderos assumed the Ministries of Foreign Affairs, Finance, and National Economy. Vice Admiral Sakellariou and General Nikolaides retained their portfolios. M. Dimitrakakis became Minister of War and Justice. The Government set about organizing in the Near East a new Greek army and air force. The remnants of the Greek navy—1 cruiser, 7 destroyers, 2 torpedo boats, and 5 submarines—joined the British Mediterranean fleet.

On September 22 the Government-in-Exile was transferred to London with the arrival there of King George II, Crown Prince Paul, Premier Tsou-

deros, and other governmental officials. The Cabinet was reshuffled again on September 29, with Premier Tsouderos retaining the Foreign Ministry. Vice Premier Sakellariou, M. Dimitrakakis, and General Nikolaidis remained in the Near East as heads of the Navy, Air, and War Ministries, respectively.

Axis Rule in Greece. The end of organized resistance in Greece found Germany in possession of most of the mainland and island possessions of the kingdom. Corfu, the Ciamura district on the mainland adjoining the Albanian frontier, and six islands of the Cyclades group in the Aegean were annexed by Italy. Soon afterward the Germans turned over to Bulgaria Western Thrace, the districts of Florina and Kastoria, and the islands of Samothrace and Thasos in the Aegean Sea. In June a large part of the German forces in Greece was transferred eastward for the attack upon Russia. The Germans retained direct control over Central Macedonia, including Salonika and adjacent islands, and over other important strategic points. The remainder of Greece was turned over to the Italians for policing. Italian troops replaced German occupationary forces in Athens June 25.

Meanwhile the Germans on April 29 had succeeded in organizing a pro-Nazi Government in Athens under General Tsolakoglou, who signed the surrender convention of April 23. His regime was denounced as illegal and traitorous by King George and the Tsouderos Government. It proceeded to arrest General Papagos and other former Greek officials and pro-British army leaders on charges of prosecuting war to the detriment of the state. The state of war declared Oct. 28, 1940, was lifted Aug. 18, 1941. In December it was announced that Tsolakoglou had deposed the head of the Greek Orthodox Church, Metropolitan Chrysanthos, for his outright opposition to the Athens regime.

The effort of the Germans to win the friendly cooperation of the Greek people achieved little success. Despite repeated warnings from the occupationary officials, emphasized by numerous court-martial and hangings, the Greek people as a whole continued to display strong antipathy to their conquerors. The German commander in Athens imposed a 10 p. m. curfew on June 1 and followed this with progressively severe repressive measures. Proclamations posted in Salonika and elsewhere warned that collective punishment would be inflicted upon areas where attacks upon occupationary forces occurred. Subsequently both Greek and German sources reported numerous executions of Greek hostages for acts of sabotage and attacks on German troops. In captured Crete, according to the Greeks, a number of towns were burned and 685 residents executed for "collective responsibility" for anti-German acts.

Atrocities also were charged to the Bulgarians in putting down an armed uprising near Drama, northwest of Salonika, late in September. The Greek Government-in-Exile estimated that 15,000 Greeks had been killed in the fighting or massacred. New risings, provoked by German and Bulgarian confiscations of the tobacco and other crops, were reported late in October in Bulgarian-occupied districts. Mass executions allegedly occurred at Doxato, Messovounies, Stavros, and a number of other villages and towns. The Bulgars were said to have deported 6,000 Greeks from Thrace and Macedonia into Bulgaria, replacing them with Bulgarians. Ruthless methods of denationalization were practiced against Greeks remaining in Bulgar-occupied territory.

Notwithstanding these harsh methods, guerrilla

warfare was waged with growing success against occupationary troops in various parts of the mainland and throughout the island of Crete. Prince Paul declared in a London statement on November 18 that Greek resistance was keeping 225,000 Italian and 70,000 German troops immobilized in Greece.

Meanwhile famine and disease spread throughout the country. The population of large areas was reported on the verge of starvation even before the German occupation. Crops of the previous autumn were a failure and the bulk of food reserves were consumed or destroyed during the warfare of the winter and spring. Prices of all commodities soared after the military collapse. Soon virtually all transactions were enacted on the black (illegal) market. Imposition on Greece of the cost of the Axis armies of occupation furthered rapid monetary inflation. Thousands of ragged, penniless, and hungry Greek troops, disarmed and disbanded by the Germans, roamed the country in search of their scattered families or en route to their homes.

Before turning the country over to the Italians, the Germans systematically looted it of olive oil, resin, turpentine, and all available food and raw materials stores. Axis commanders reportedly requisitioned all foodstuffs for their armies and retained the excess supplies to the civil population at exorbitant prices. In July it was indicated that famine was an actuality in many parts of Greece, and a cholera outbreak was reported. In September the Near East Foundation warned that only outside aid could save 2,000,000 Greek children from death by starvation during the winter. In response to appeals from the Greek Government-in-Exile, the British relaxed their blockade to permit shipment to Greece of foodstuffs and medical supplies purchased in Turkey with American and British funds. The supplies, distributed under an Axis guarantee by the International Red Cross, filled only a small fraction of the need. In November the Red Cross stated that it received upward of 50 starvation cases daily in Athens alone. The winter found Greece reduced to a state of bitter destitution unmatched in any part of Europe except Poland.

See BULGARIA, GERMANY, GREAT BRITAIN, ITALY, and YUGOSLAVIA, under *History*; LENI-LEASE ADMINISTRATION; NAVAL PROGRESS, SEISMOLOGY; WAR DEBTS; WORLD WAR.

GREEK ORTHODOX CHURCH. See RELIGIOUS ORGANIZATIONS.

GREEK STUDIES. See PHILOLOGY, CLASSICAL.

GREENLAND. A large island off northeastern Canada. Denmark's only colonial possession, it has an area of 736,518 square miles, of which 705,234 square miles comprises the central plateau, averaging about 10,000 feet high and capped by ice 1,000 feet or more thick. The ice-free coastal area comprises about 31,284 square miles. Estimated population in 1940, 18,200 including about 17,800 Eskimos and 400 Danes. The area under direct Danish administration includes 46,740 square miles and is divided into three inspectorates as follows: South Greenland on the southwest coast (pop., about 7,000; capital, Godthaab); North Greenland on the west coast (pop., 9,000; capital, Godhavn); and East Greenland on the east coast (pop., 1,000). The chief settlements are Julianehaab (2,500 inhabitants), Godthaab (1,300), Godhavn, Angmagsalik, and Marmorilik.

Cryolite, mined at Ivigtut, accounts for nine-tenths of Greenland's total income of about \$800,000 annually. Marble is mined at Marmorilik in North Greenland. Other products are graphite, cod-

fish, halibut, Arctic salmon, fox and bear pelts, eider down, seal blubber, and some sheep. Commerce is a monopoly of the Danish Government and its representatives in Greenland. Exports to Denmark in 1938 totaled 5,939,000 Danish crowns; imports from Denmark, 3,064,000 crowns. Revenue in 1938-39 was 4,810,000 crowns; expenditure, 5,573,000.

Normally administration of Greenland is vested in a director (appointed by the King) in Copenhagen, who is represented by governors and administrative councils in North and South Greenland, respectively. After the German occupation of Denmark on Apr. 9, 1940, the administrative councils in Greenland met at Godhavn on May 3 and voted to take over the powers which the Danish Government was unable to exercise in the colony. While reaffirming their allegiance to King Christian X of Denmark, the councils expressed the hope that the U.S. Government would keep in mind the exposed position of the Danish flag and of the native and Danish population in Greenland.

History. The measures taken by the United States in 1940 to prevent German occupation or control of Greenland (see YEAR BOOK for 1940) were extended in 1941 when new evidences of growing German interest in the colony were reported.

On March 27 and 28, German bombers were reported to have flown over the eastern coast of Greenland. It was also indicated that meteorological reports were being sent from Greenland to the Reich to facilitate German air operations. This caused further consultations in Washington, followed by the conclusion on April 9 of an agreement which in effect placed Greenland under the protective custody of the United States for the duration of the European War. The accord was signed by Secretary of State Hull and the Danish Minister, Henrik de Kauffmann, "acting on behalf of his Majesty the King of Denmark in his capacity as sovereign of Greenland." It was concurred in by the Danish authorities in Greenland beforehand.

Under the agreement, the United States reiterated its recognition of Danish sovereignty and agreed to assist Greenland in maintaining its existing status. Washington received the right to construct and operate landplane, seaplane, radio, and meteorological facilities for this purpose. It was also authorized to install fortifications and other defense facilities and to take any measures needed to insure their efficient operation, including the improvement of harbors and the construction of roads and other communications. The United States also obtained the right to lease land and water areas necessary for the defense works and their protection; exercise exclusive jurisdiction over such leased areas; establish postal facilities and commissary stores for American military and civilian personnel; and import all equipment and supplies into Greenland free of customs or other charges.

The U.S. Government in turn undertook to respect all legitimate interests in Greenland as well as laws, regulations, and customs pertaining to the native population and the internal administration. The agreement was to remain in force "until it is agreed that the present dangers to the peace and security of the American Continent have passed." At that time either party could, after consultation between the American and Danish Governments, terminate the agreement on 12 months' notice.

In announcing this agreement on April 10, President Roosevelt stated that "we propose to make sure that when the German invasion of Denmark has ended, Greenland will remain a Danish colony." The German-controlled Danish Government in Co-

penhagen was not consulted in advance, and it immediately sought to repudiate the agreement. See DENMARK under *History* for details.

Construction of a \$20,000,000 U.S. air base and other defense installations in Greenland began in the autumn, and the work was continued all winter. In October U.S. forces in Greenland seized a powerful Nazi-controlled radio transmitter, used to dispatch weather and other information to Berlin, and captured a small German-controlled Norwegian freighter with a member of the Gestapo aboard off the coast of Greenland.

See UNITED STATES under *Foreign Affairs*.

GRENADA. See WINDWARD ISLANDS.

GROUP MEDICAL CARE. See CONSUMERS' COOPERATIVES.

GUADELOUPE. A French West Indian colony consisting of two main islands—Guadeloupe proper (Basse-Terre) and Grande-Terre—and the dependencies—the islands of Les Saintes, Désirade, St. Barthélemy, St. Martin (northern part only), and Marie Galante. Total area, 688 square miles. Population (1938 estimate), 310,000. Chief towns: Basse-Terre, capital (13,638 inhabitants), Pointe-à-Pitre (43,551). Chief products—sugar, coffee, rum, cacao, logwood, bananas, manioc. Trade (1938): 250,583,000 francs for imports and 296,472,000 francs for exports. Budget (1939): 83,608,979 francs (revenue and expenditure balanced). Public debt (Dec. 31, 1938), 12,110,210 francs (franc averaged \$0.0288 for 1938; \$0.0251, 1939). Roads (1940): 754 miles. A governor heads the administration of the colony. Governor, M. Ferin (appointed Dec. 13, 1940). See MARTINIQUE under *History*.

GUAM. An insular possession of the United States; the largest and most populous island of the Marianas group, in mid-Pacific. It lies about 5,100 miles from San Francisco, 3,300 from Honolulu, 1,350 from Yokohama, and 1,500 from Manila. Area, 225 square miles; estimated population (July 1, 1941), 23,394, which included 21,502 native-born, 812 foreign-born, and 588 members of the naval establishment. The 1940 census population was 22,290 (18,509 in 1930). Capital, Agana, 12,553 inhabitants.

The native population is mainly of Chamorro stock. The languages in use are English, Spanish, and Chamorro. Public instruction through high school grades is available to all children who make satisfactory progress. Commencing with the seventh grade, attendance is limited by competitive examination. The number of enrolled pupils in the public schools averaged 5,084 for the year 1940-41. Most of the pupils were in native schools, taught by native teachers. An American school, for children of nonnatives, was maintained. Copra, coconut oil, alligator pears, and kapok are exported. Products grown for the domestic market are cacao, coffee, rice, sugar, corn, sweet potatoes, and fruits. Trade (year ended June 30, 1941): \$994,010 for imports and \$84,278 for exports (copra was the main export).

Guam is a United States naval station; its Governor, who is also the commandant of the station, is a naval officer commissioned by the President. Governor, Capt. G. J. McMillin, U.S. Navy (assumed office June, 1940). An elective native Congress consisting of a House of Council (16 members) and a House of Assembly (27 members) has only an advisory voice in the government. Planes of Pan American Airways operating between Ala-

meda, Calif., Manila, and Hong Kong stopped regularly at Guam. A cable station on the island relays messages between San Francisco and the Philippines, China, and Japan.

History. During 1941 work on nonmilitary improvements on the island, including roads, hospitals, and harbor improvements was being carried forward. The natural harbor at Apra was being greatly improved by building up the natural barrier of the reef to make a breakwater, and in removing coral heads from the outer harbor and dredging the inner harbor. In an Executive Order of Feb. 14, 1941, President Roosevelt announced that after May 15, 1941, no unauthorized vessels or aircraft would be permitted within three miles of Guam. The U.S. Senate on Mar. 10, 1941, approved an appropriation for construction at Guam. On Aug. 3, 1941, a typhoon struck the island, causing damage to crops and property, but no lives were lost.

Guam was the first United States outpost in the Pacific to fall under the control of Japan. A U.S. Navy communiqué of Dec. 9, 1941, announced that Japanese aircraft in two flights had attacked Guam on Dec. 8, 1941, and admitted that the U.S. minesweeper *Penguin* had been sunk outside the island. Japanese troops landed on the island December 10 and forced the surrender of the garrison two days later. See WORLD WAR.

GUATEMALA. A republic in Central America. Capital, Guatemala City.

Area and Population. Area 48,290 square miles; population, 3,284,269 at census of Apr. 7, 1940. Some 65 per cent of the population are Indians and the bulk of the remainder are mestizos. The small ruling class is largely of European origin. Populations of the chief cities with their suburbs in 1940 were: Guatemala City, 176,780, Quezaltenango, 30,125, Cobán, 26,774, Zacapa, 18,094.

Defense. Military service is compulsory. As of November, 1940, the active army numbered about 5,000, trained reserves, 10,600; air force, 58. Under an agreement signed May 27, 1941, a U.S. Army officer was detailed to serve as Director of the Polytechnic School (Guatemalan military academy). Defense budget for 1941-42, \$1,900,000.

Education and Religion. About 80 per cent of the adult inhabitants are illiterate. In 1940 there were 142,335 pupils in 2,485 primary schools, 5,574 in 28 secondary schools, and 694 in the University of Guatemala. Most Guatemalans profess the Roman Catholic faith, but other creeds enjoy liberty of worship.

Production. Coffee and bananas account for about 90 per cent of all exports. The chief crops in 1939-40 were (in quintals of 101.4 lb. except as indicated): Coffee, 1,139,753; bananas, 12,849,752 stems; corn, 10,019,980; beans, 1,268,088; wheat, 330,912; rice, 262,458; plantains, 1,330,292; white sugar, 352,692; brown sugar, 781,738. Coffee exports in 1940-41 were 745,303 bags (of 132 lb.). The production of chicle in 1940-41 was 2,500,000 lb. Livestock, gold, and hardwoods are other products. Industrial establishments are confined largely to coffee-cleaning, sugar-refining, and flour mills, and shoe, soap, and pottery factories.

Foreign Trade. Imports in 1940 were reported at \$12,666,970 (\$15,295,729 in 1939); exports, \$12,039,492 (\$16,985,310). The 1940 export value is not comparable with the 1939 figure due to changes in the method of evaluating exports. The United States supplied 73.8 per cent of the 1940 imports (54.5 in 1939); Germany, 2.9 (27.0). Of the exports, the United States in 1940 took 91 per cent (70.7 in 1939); Germany, 0.0 (11.5).

Finance. Actual ordinary budget returns in the fiscal year ended June 30, 1940, were \$12,150,173 (affected by a new method of accounting with respect to National Properties); expenditures, \$11,035,523. Budget estimates for 1940-41 balanced at \$10,258,000; for 1941-42, \$10,223,000. The public debt on Dec. 31, 1940, totaled 10,341,000 quetzales (6,153,000 quetzales representing £1,520,000 of sterling indebtedness and 4,188,000 quetzales in dollar and quetzal obligations). The quetzal equalled \$1.

Transportation. The International Railways, with 509 miles of track, carried 1,466,780 passengers and 90,122,830 ton-miles of freight in 1940. The only other railway is a small 30-mile line. A total of 202 miles of new highways were completed during 1940, bring the total mileage to 3,986. An additional 506 miles were under construction. In January, 1941, the franchise of the TACA air network was abrogated. A new local air-transport company, known as Aerovías de Guatemala, S.A., was organized as an affiliate of Pan American Airways. During 1940 737 vessels of 1,613,626 gross tons entered Guatemalan ports (1,100 of 2,794,108 tons in 1939).

Government. The Constitution of Jan. 1, 1928, as amended, provides for a President elected for 6 years and ineligible for reelection, a single-chambered National Assembly of 74 members elected by popular vote for 4 years, and an appointive Council of State of 7 members which supervises public contracts and concessions. President in 1941, Gen. Jorge Ubico, who assumed office Feb. 14, 1931, and had his term extended by a hand-picked Constituent Assembly on July 10, 1935, to Mar. 15, 1943.

History. Although his term of office was not due to expire until 1943, President Ubico in 1941 completed arrangements to succeed himself for another six-year term ending in 1949. First a so-called "workers' front" asked the President's Liberal Progressive party for permission to support him as candidate for another term. In June a convention of Indians met in the capital and approved Ubico's candidacy. A Constitutional Congress was convened on September 1 and on September 11 it reelected Ubico for the 1943-49 term.

The Ubico regime extended its policy of close cooperation with the United States. A ban on war discussions favoring the Axis powers was imposed January 28. On June 3 the President aligned Guatemala economically with the United States by prohibiting the export or reexport of native and imported products except to the United States or to other American republics which had adopted similar export control measures. On August 5 Guatemala's federal reserve bank, the Banco Central, ousted four German members of the board of directors. The Guatemalan correspondent of Transocean, the pro-Nazi news agency, was ordered to leave the country because of his Nazi activities.

German planters, who owned or controlled 50 per cent of Guatemala's coffee production, were faced with bankruptcy through a Government decree forbidding steamship lines to load coffee owned by the Germans. The November 7 supplement of the United States blacklist contained some 234 names of Axis sympathizers in Guatemala, mostly owners of Coffee fincas. To lessen the adverse effect of the blacklist on Guatemala's economy, the United States agreed to import restricted quantities of coffee from German-owned estates.

When Japan attacked Hawaii by surprise on December 7, President Ubico immediately wired assurances of his support to President Roosevelt. On

December 8 a special session of the National Assembly declared war on Japan. Immediately after the Guatemalan Government was notified of the German and Italian war declarations against the United States, the National Assembly again convened and declared Guatemala in a state of war with Germany and Italy (December 11).

A Coffee Advisory Board was established July 29, 1941, to study problems of the coffee industry. A National Petroleum Committee, appointed September 12, was given complete control over the transportation and distribution of petroleum products.

See *ARCHAEOLOGY*; *LEND-LEASE ADMINISTRATION*; *PAN AMERICANISM*.

GUAYULE. See *CHEMISTRY, INDUSTRIAL* under *Rubber*.

GUIANA. See *BRITISH GUIANA, FRENCH GUIANA, SURINAM*.

GUINEA, Portuguese. See *PORTUGAL* under *Colonial Empire*.

GYMNASTICS. The year 1941 marked the fifth straight year that George E. Wheeler, a school teacher of East Washington, Pa., has assumed top rank in gymnastics. In the national championship meet at Union City, N.J., Wheeler reigned supreme in free calisthenics, long horse, parallel bar, and horizontal bar, and accumulated sufficient points in other events to command all honors.

Other national champions were William L. Taylor, Union City, side horse, Joseph Goldenberg, Bloomington, Ind., flying rings, Vernon S. Gilmore, Ohio State, indian clubs, George Szypula, Temple University, tumbling; and Roman N. Pico, Penn State, rope climb. The University of Illinois took the national crown, the Western Conference, and the N.C.A.A. meet.

HADHRAMAUT. See *ARABIA* under *Aden Protectorate*.

HAITI. A West Indian republic, occupying the western third of the island of Haiti or Hispaniola. Capital, Port-au-Prince.

Area and Population. Area, 10,204 square miles, population, estimated on Dec. 31, 1939, at 3,000,000 (1,631,000 at 1918 census). With the exception of some 3,000 white foreigners (467 United States citizens on Jan. 1, 1940) and a few thousand mulattoes, the inhabitants are all Negroes. Estimated populations of the chief cities in 1936: Port-au-Prince, 105,000 (125,000 in 1940); Cap Haitien, 15,000; Aux Cayes, 15,000; Gonaives, 10,000; Saint Marc, 10,000; Jacmel, 10,000. French is the language of government and the educated class. The peasants, comprising more than 80 per cent of the population, speak Creole French.

Religion and Education. Most of the inhabitants profess the Roman Catholic faith. About 85 per cent of the people are illiterate. There are about 1,060 primary schools, with 87,000 pupils; 21 secondary schools, with 6,000 pupils; 68 farm and vocational schools, with 12,200 pupils; 2 normal schools, and colleges of medicine, law, applied science, and agriculture. A National Law School was opened at Port-au-Prince Apr. 6, 1942.

Defense. The armed constabulary, organized by United States officers during the American military intervention (1915-34) and since 1934 under Haitian command, comprises about 2,500 officers and men. A United States military mission was contracted for by the Haitian Government in 1938 to reorganize the military school and act as technical advisers to the general staff of the Garde d'Haiti (constabulary). See *History*.

Production. Agriculture supports the mass of the population. The country's prosperity is largely dependent upon export crops, mainly coffee. For the fiscal year ended Sept. 30, 1941, the chief exports were coffee, 22,641,275 kilos (kilo equals 2.2 lb.) valued at 12,918,466 gourdes (gourde equals \$0.20); bananas, 3,283,645 stems valued at 7,761,732 gourdes; sisal, 10,797,222 kilos valued at 4,316,865 gourdes; raw cotton, 2,630,405 kilos valued at 2,313,791 gourdes; raw sugar, 19,819,590 kilos valued at 2,046,122 gourdes; cacao, 1,504,570 kilos valued at 683,242 gourdes. Manufacturing is confined to sugar refining, rum distilling, and the preparation of tobacco products, canned fruit, and vegetable lard.

Foreign Trade. During the fiscal year 1940-41, imports were valued at 37,156,000 gourdes (39,701,000 in 1939-40) and exports at 33,287,000 gourdes (26,995,000 in 1939-40). The United States supplied 83 per cent of the 1940-41 imports (73 in 1939-40); British Commonwealth, 8 (12); Japan, 3 (3). Of the exports the United States took 88 per cent in 1940-41 (52 in 1939-40); British Commonwealth, 6 (30).

Finance. For the fiscal year 1940-41, government receipts totaled 26,929,883 gourdes (26,873,411 in 1939-40) and expenditures from revenues were 25,565,000 gourdes (28,478,000 in 1939-40). In addition there were expenditures from the United States public works credit during 1940-41 of 7,254,000 gourdes, bringing the total loan expenditure under this account to 24,747,000 gourdes. Unobligated Treasury reserves on Sept. 30, 1941, totaled 1,858,000 gourdes. The gross public debt on Sept. 30, 1941, was 68,096,000 gourdes.

Transportation. In 1940 there were 158 miles of railways, 1,545 miles of roads, and a connection at Port-au-Prince with Pan American Airways Caribbean network. Shipping (1939-40): 498 vessels with a net registered tonnage of 1,412,023 called at Haitian ports.

Government. The Constitution of June 17, 1935, as amended Aug. 8, 1939, vested executive powers in a President elected for five years by a two-thirds vote of the National Assembly. The National Assembly consists of 37 Deputies, elected for four years by the vote of literate property owners, and 21 Senators, 11 elected by the Chamber of Deputies and 11 appointed by the President for six-year terms. Presidents completing their terms since 1930 become life members of the National Assembly, President, Elie Lescot who replaced Sténio Vincent on Apr. 15, 1941.

HISTORY

Election of Lescot. The preparations made in 1940 for continuing President Sténio Vincent in office for another five-year term (see *YEAR BOOK* for 1940, p. 331) were carried forward on Mar. 10-11, 1941, when the Chamber of Deputies and Senate unanimously approved a resolution calling upon him to remain in office because of "exceptional circumstances confronting the nation." Dr. Vincent's decision to accept another term in violation of the constitutional bar to reelection aroused strong popular opposition in Haiti. A revolutionary outbreak appeared likely. It was rumored that Washington also expressed disapproval through its new Minister to Haiti, John Campbell White, who arrived in Port-au-Prince March 10.

Whatever the reason, Dr. Vincent on April 4 announced that he would not accept another term. Consequently the Chamber and Senate met in joint session on April 15 and elected Elie Lescot, Minister to Washington, President for the new term begin-

ning May 15, by a vote of 56 to 2. Lescot, who was known as a Vincent supporter, pledged himself to carry on Dr. Vincent's policies. His election represented another victory for the small mulatto elite, which dominated the mass of Haitian Negroes. His candidacy provoked a seemingly spontaneous protest demonstration by several thousand residents of the capital on April 9. Lescot's chief rival for the Presidency was Amilcar Duval, who resigned as Minister of Justice to enter the race.

Economic Conditions. There was a turn for the better during 1941 in the extremely critical economic situation prevailing at the end of 1940 (see *YEAR BOOK* for 1940). The inter-American coffee quota agreement brought an improvement in the prices and export market for coffee, Haiti's main cash crop. The shipping shortage was counterbalanced by improved foreign demand for Haiti's bananas, sisal, cotton, and sugar. On June 7, the Government placed control of coffee exports and the fixing of sales prices in the hands of the National Bank of the Republic.

Relations with United States. Another important factor in the improved economic outlook was the additional financial and economic aid extended to Haiti by the U.S. Government. By another agreement signed in Washington Feb. 13, 1941, the Haitian Government was authorized to postpone payment of one-third of the interest due on the Republic's outstanding bonds on Apr. 1, and Oct. 1, 1941. As a result of improved coffee prices and consequent higher government revenues, the Government on September 5 announced its intention to resume full debt service on October 1, and at the same time to pay the balance of one-third of the service still due on the April coupons.

On May 6 the Haitian and U.S. Government announced an agreement in principle on a long-term program of cooperation in the development of Haiti's agriculture and general economy. The plan called for the development of the rubber industry in Haiti through planting 50,000 to 60,000 acres of rubber trees; an increase in banana plantings; the planting of oil crops, spices, drug plants, food plants, and fiber plants; improvement of cacao production; and the stimulation of small handicraft industries. The program was based on surveys and experimental plantings by the U.S. Dept. of Agriculture in Haiti. Washington undertook to provide further technical information and assistance, and to advance \$500,000 to supplement the 1938 credit of \$5,000,000 which was granted to finance the public works program executed by the J. G. White Engineering Corp. The \$500,000 was needed to complete certain highway and irrigation projects and provide transportation facilities to areas suitable for rubber and general agricultural development.

Another agreement in principle announced at the same time, and concluded in detailed form on September 13, modified the American control of Haiti's finances established under the agreement of Aug. 7, 1933. The offices of the American Fiscal Representative and Deputy Fiscal Representative were abolished, and the duties of collecting revenues, controlling the budget, and supervising the republic's finances were entrusted to the National Bank of Haiti. Of six voting members of the bank's Board of Directors, three were to be Haitian citizens appointed by the President of Haiti and three citizens of the United States chosen by agreement between the two Governments. Two copresidents of the bank, one Haitian and one American, were provided for. Interest and amortization service of the outstanding 1922 and 1923 dollar bonds were

declared an irrevocable first lien upon Haitian revenues. Until amortization of the bonds was completed, the Haitian Government agreed not to increase its public debt except in agreement with the United States. If Haiti's revenues exceeded \$7,000,000 annually, the Government undertook to apply additional sums to the redemption of the bonds.

A new military accord, replacing that of 1938, was concluded by Haiti and the United States May 23. It provided for continuation and expansion of the instruction of the Garde d'Haiti by a detail of U.S. Army officers for the ensuing four years. The Haitian Government at about the same time reportedly authorized U.S. military planes patrolling the Caribbean to use an air base near Port-au-Prince.

War with the Axis. Haiti's close relations with Washington were reflected in growing friction with the Axis powers. On August 12 the Government disclosed that it had rejected a German protest against the United States black list of Haitian firms trading with the Axis. Later the same month Haiti ousted all Nazi consular officials and the Reich asked Haiti to withdraw its consular officials from Germany and all German-occupied territories. A Haitian decree of September 8 froze the funds of German and Italian firms on the U.S. black list and prohibited commercial transactions with them. After the Japanese attack of December 7 upon the United States, President Lescot declared war on Japan December 8 and on Germany and Italy December 12 with the unanimous approval of the National Assembly.

For incidents along the Dominican frontier and the subsequent conference between President Lescot and the Dominican dictator, see *DOMINICAN REPUBLIC* under *History*.

See *LEND-LEASE ADMINISTRATION*; *PAN AMERICANISM*.

HAMBURG. See *GERMANY* under *Area and Population*.

HANDBALL. Joseph Peter Platak, left-handed Chicago handball player, continued to dominate his sport in 1941, winning his seventh National A.A.U. four-wall title, by crushing the Harrishburg switchboard operator, Stanley Hitz, in straight games in the final. Eddie Linz and Frank Coyle of the New York Athletic Club regained the doubles title. In the one-wall game, practiced for the most part at the beaches in summertime, Artie Wolfe emerged champion in the singles and Marvin Hecht and Morton Alexander retained the doubles honors. Miss Marie Zanetti of the Bronx, N.Y., was considered the best women's player.

HARBOR WORK. See *PORTS AND HARBORS*.

HATAY, Republic of. See *SYRIA AND LEBANON*.

HATCHERIES. See *FISH AND WILDLIFE SERVICE*.

HAWAII, Territory of. A Territory of the United States, composed mainly of the eight inhabited islands of the Hawaiian Island group, in the North Pacific Ocean and within the tropics. Capital, Honolulu, on Oahu Island, 2,408 miles from San Francisco.

Area and Population. The islands that form the Territory have a combined area of 6,407 square miles. Their population of Apr. 1, 1940 (U.S. census), numbered 423,330; 1930, 368,336. Approximate population of June 30, 1940, by areas: city of Honolulu, 180,986; rural part of Oahu, 79,899; city of Hilo, 16,641; rural Hawaii (island), 65,922;

Kalawao, 465; Kauai, 35,956; Maui, 7,809. According to the U.S. Census of 1940, the population, by origins, numbered 157,905 racially Japanese, 64,310 wholly or partly of Hawaiian aboriginal stock, 103,791 Caucasian, 52,569 Filipino, 28,774 Chinese, 6,851 Korean, 8,296 Puerto Rican, and 834 other.

The Census of 1940 showed 30,089 (or 40.8 per cent) more Caucasians than the Census of 1930, 18,274 more Japanese, 13,450 more Hawaiians (including part-Hawaiians), 1,595 more Chinese, 1,225 more Puerto Ricans, 390 more Koreans, and 10,483 fewer Filipinos. An estimate of June 30, 1940, set the proportion of U.S. citizens among all inhabitants at 81.79 per cent; among the Japanese group (mainly born in Hawaii), at 77.9, among the Hawaiian racial group, at 97.85.

Education. The enrollments of pupils in the public schools totaled 91,821 for June, 1940; this comprised 53,378 in elementary grades (from 1 through 6) and 38,443 in upper grades (7 through 12). The elementary enrollments had decreased by 4,901 since 1933, but the enrollments in the upper grades had risen. For the year 1939-40 the public schools cost \$6,996,947 in current expense and \$335,825 in capital outlay. The University of Hawaii had (year 1939-40) 1,947 undergraduate students and 478 graduate students, not to count other groups, particularly the heavy attendance in the summer session.

Employment and Production. The gainful industries of the Territory are predominantly agriculture and the processing of agricultural products. The main exports, cane sugar and the products of the pineapple, accounted for more than \$50,000,000 each, in the Hawaiian exports of 1939. The two covered well over nine-tenths of yearly exports. In the case of the pineapple as well as that of the cane, agriculture and manufacture were closely associated, in the hands of large companies or associations. Thus, of the \$9,099,832 paid to farmers in the Territory during the fiscal year 1940 under the provisions of the Agricultural Adjustment Act, \$8,975,614 went to a group of 2,068 growers of sugar cane. Workers on sugar plantations numbered 44,810 in 1938. The pineapple industry, though somewhat less in yearly value of product than the sugar industry, was estimated by the Pineapple Producers Cooperative Association to have employed 78,000 persons in 1939, or nearly one-fifth of the population. The Hawaii Experiment Station was reported in 1940 to have found a practicable way of treating the papaya fruit so that it would stand exportation, and there appeared some prospect that the small yearly exports of the papaya might in their turn expand. Manufacturing, proper, employed 16,842 wage earners in 1939 and put out \$133,655,947 in products.

The season of harvesting and grinding sugar cane late in 1940 and early in 1941 yielded an estimated 865,000 short tons of sugar. Occasional reports around and after the middle of 1941 indicated active business in Hawaii and exports above the corresponding dates of the year previous; but official summaries of the Territory's commerce for the full year were hindered by warfare. The quota of sugar allowed by the U.S. Government as marketable in the Continental United States in 1941 was set at 961,764 short tons, raw.

For the calendar year 1940 the estimated shipments of canned fruit or juice of the pineapple rose to \$54,000,000. The sales of cane sugar apparently fell to 916,500 short tons, as against 940,060 tons for 1939 and allowable exports of 938,037 tons to the Union under the quota system.

Oversea Trade. In the calendar year 1940 Hawaii's imports from the United States amounted to \$127,439,539; exports of Hawaiian products to the United States totaled \$96,924,908. Data for 1940 did not cover Hawaiian trade with the other countries. Despite shipments of \$5,165,942, additional, from Hawaii, under the head of U.S. products returned, the totals for 1940 left Hawaii an apparent debtor in trade with the United States for some \$25,000,000 of imports in excess of exports. In view of unusual military and naval outlay in the Territory, involving many kinds of shipments from the United States, the heavy adverse excess of trade did not necessarily represent an upset in the usual balance of actual commerce. Among the chief sub-totals of the imports above, \$18,109,684 of vegetable foodstuffs, \$19,880,238 of machinery and vehicles, \$18,589,368 of other iron and steel manufactures, and \$12,312,290 of products of petroleum, furnished the greater part of the total imports of U.S. goods.

Transportation. Steam railroads, on the islands of Oahu, Hawaii, and Maui, aggregated 322.64 miles of track in 1940. Motor vehicles registered in 1940 numbered 71,058—this made one to every six inhabitants. The Inter-Island Steam Navigation Co. transports passengers and freight among the chief islands by sea. Inter-Island Airways covers similar routes by air. The mileage of vehicular roads was stated in 1940 as 2,040. Ship-lines connect Honolulu with North and South America, Australia, and the Orient. Pan American Airways touch at Honolulu in passage between the United States and the Far East; the same system started in 1940 a service between San Francisco and New Zealand via Hawaii.

Government. The Governor of the Territory (in 1941 Joseph B. Poindexter) holds office by appointment of the President of the United States, for a term of four years. The registered voters of the Territory elect quadrennially 15 Senators and biennially 30 Representatives, constituting the Legislature. This body passes appropriations and other acts within the Territorial authority. The popular vote elects to each U.S. Congress a Delegate, with a voice, but no vote, in the House of Representatives; Samuel W. King, reelected Delegate in 1940.

HISTORY

Japanese airplanes, without warning, bombed Pearl Harbor and Manila at sunrise on December 7, simultaneously with the Japanese envoys' declaration to the U.S. Government at Washington, breaking off diplomatic relations. The military aspects of the Japanese raid are discussed in the article *WORLD WAR*. In its aspect to Hawaii the event overshadowed every other that had occurred under American rule. One of its most rapid effects was to shift public attention from other concerns to the unfamiliar business of self-protection against a foreign enemy. While the Japanese directed the raid of December 7 mainly on the U.S. Naval base of Pearl Harbor and on air and military bases, thus causing great loss of life among men in the armed services, a considerable number of the civilian population also were killed. Subsequent minor Japanese air raids on the Territory kept up the feeling of alarm through December.

The Territorial Government had to deal immediately with plans for protecting the population, in case of further attack. The problem of food, unexpectedly to those unfamiliar with Hawaiian economics, also assumed pressing importance. Measures against disloyal aid to the enemy became an urgent need. The main industries of the Islands,

being closely connected with the U.S. mainland normally but now threatened with an interruption of regular shipping, faced serious disturbance.

The Problem of Food. Governor Poindexter gave particular attention, from the first, to assuring, for the inhabitants, the importation of a proper reserve of food. Hawaii had imported, in 1939, about \$24,000,000 of food and beverages—\$55 to every inhabitant. Though largely fertile and cultivated, the Territory specialized in sugar cane and pineapples; hence it needed much meat and breadstuffs from the Continental United States. A stock great enough to carry it for a fairly long time could alone enable it to stand a siege or even a blockade, all the more as its own fisheries would then be hindered.

The Hawaiian Government did not wait until December 7 to begin to think about the eventuality of war with Japan. On the contrary, in the spring and summer it gave much attention to precautions for meeting such a case. Poindexter visited Washington in July and, with Territorial Delegate King, talked Hawaii's problems over with Federal authorities. The accumulation of the proposed food-stock called for an outlay much beyond the Territory's financial means, even though this outlay would probably in great part be recovered in time. Application was therefore made for Federal funds. Eventually the Government put \$10,000,000 at the Territory's disposal for purchases of food. This did not suffice in Poindexter's judgment of the situation after December 7. Late in December he requested \$35,000,000 more from Washington for the same purpose. The emergency as to food, however, did not at any moment become acute; the need related to a more or less distant future, though the provision had to be prompt. A degree of supervision over the food stores started just after the raid on Pearl Harbor, at a moment when people in Honolulu, suddenly becoming sensitive to the food question, started buying up foodstuffs in alarming quantities. Later, supplies of food in much the usual variety became available in ordinary plenty.

Protecting Persons and Property. A great deal was accomplished toward the protection of the population and goods of Hawaii well in advance of the outbreak of hostilities with Japan. Honolulu, a city of about as many people as Richmond, Va., was the most exposed large community of its size under American rule (cities of the semi-independent Philippines of course excepted). Poindexter summoned the Hawaiian Legislature in special session after his visit to the United States. The session voted measures providing for the protection of the people. It enacted a so-called M-Day Bill which gave Poindexter extraordinary powers in emergency and shaped the details of a system of control over civilians. As early as May 20 Hawaiian communities' lights were blotted out for part of a night, as a drill to teach inhabitants how to foil raiding airplanes. The standard routine worked out by the U.S. Office of Civilian Defense was adopted for Honolulu. The schools were closed after December 7. The consumption of gasoline was limited to 10 gals. a month for each automobile. A plan under way at the end of the year sought the removal of 60,000 dwellers from crowded parts of Honolulu to camps naturally sheltered by mountains, in case of peril.

Treasonable Agents. Persons of Japanese racial origin made up three-eighths of all the Territory's inhabitants. Yet the Japanese immigration, a relatively old story, had virtually ended in the '20s. Hawaiian-born children now prevailed in number

over their Japanese-born elders and parents. The rest of the population looked on the Hawaiian-born Japanese without particular suspicion, for these had acquired American ways in the public schools. The immigrant Japanese none the less still numbered about 35,000—quite enough to include many covert agents of Japan even, though most of the immigrants were trustworthy. In March a Federal grand jury in the Islands indicted 71 Japanese in cases where alleged Japanese owners had registered fishing vessels in the names of Japanese who were U.S. citizens. A belief had long prevailed that Japanese fishing vessels thus disguised spied on the Hawaiian coasts and defenses.

Reports in the press told that Japanese agents had cut out the growing sugar cane in places, fashioning gaps in the outline of great arrows to guide the raiders of December 7; that a Japanese known at Schofield Barracks had been arrested on that day for sending messages by a short-wave radio; and that Japanese dealers in vegetables, serving naval vessels, had gained knowledge needful to the raiders. These and other such stories, true or false, showed people in Hawaii by no means disposed to trust all of Japanese race. The Territory was put under martial law on December 10, but no extensive segregation of Japanese was reported.

See ENEMY ALIENS; JAPAN under *History*, LABOR LEGISLATION; WORLD WAR.

HAY. The hay crop in 1941 was estimated by the U.S. Department of Agriculture at 94,107,000 tons which included 82,358,000 tons of tame hay and 11,749,000 of wild hay, less than 1 per cent smaller than the 94,541,000 tons harvested in 1940 and compared with the 1930-39 average of 78,733,000 tons. The 71,893,000 acres harvested averaged 1.31 tons per acre and the 71,806,000 acres harvested in 1940 1.32 tons per acre compared with the 1930-39 average, 1.16 tons per acre and 67,893,000 acres. The combined hay and forage crop of 1941 was one of the largest ever produced, and there was also a large tonnage of hay carried over from the 1940 crop, and a heavy growth of feed on western ranges and southwestern wheat pastures. States leading in production of tame hay were Wisconsin 6,720,000 tons, Iowa 5,581,000, Minnesota 5,453,000, California 4,588,000, New York 4,189,000, Illinois 3,619,000 and Missouri 3,405,000 tons; and of wild hay Nebraska 2,243,000 tons, North Dakota 1,686,000, Minnesota 1,489,000, and South Dakota 1,323,000 tons.

Important kinds of tame hay and States with the highest production in each class included alfalfa 32,346,000 tons from 14,929,000 acres, California 3,198,000 tons; clover and timothy 23,106,000 tons from 19,176,000 acres, Wisconsin 3,484,000 tons; lespedeza 5,521,000 tons from 5,413,000 acres, Tennessee 1,366,000 tons; soybeans 4,741,000 tons from 3,649,000 acres, Illinois 544,000 tons; sweet clover 1,277,000 tons from 972,000 acres, North Dakota 504,000 tons; cowpeas 1,614,000 tons from 1,941,000 acres, Texas 546,000 tons; peanuts 987,000 tons from 1,894,000 acres, Georgia 264,000 tons; small grains cut green for hay 4,445,000 tons from 3,716,000 acres, California 1,154,000 tons; sweet sorghum (sorgo) for forage and hay 15,040,000 tons from 8,582,000 acres, Kansas 4,173,000 tons; and other hay crops 8,321,000 tons from 7,542,000 acres, Minnesota 777,000 tons.

Production of seed of important kinds of hay included alfalfa seed 1,017,100 bu., red clover 1,525,200 bu., alsike clover 327,000 bu., sweet clover 827,300 bu., timothy 1,218,000 bu., and les-

pedeza 169,251,000 lb. The aggregate production of the six principal grass and clover seeds sown for hay production, 445,897,000 lb., was 9 per cent smaller than in 1940, but well above the 1930-39 average. The season average price per ton received by farmers for all hay was \$9.01 (December 1 price) and the estimated value of production was \$847,475,000 in 1941 compared to \$7.50 and \$710,188,000 in 1940.

HEALTH, National Institute of. See PUBLIC HEALTH SERVICE; also, DENTISTRY.

HEALTH AND WELFARE, Division of. See DEFENSE HEALTH AND WELFARE SERVICES.

HEALTH WORK. See BIRTH CONTROL; CHILDREN'S BUREAU, COMMONWEALTH FUND; CONSUMERS' CO-OPERATIVES; DEFENSE HEALTH AND WELFARE SERVICES; LABOR CONDITIONS under *Health and Safety*, MEDICINE AND SURGERY, PHILANTHROPY; PUBLIC HEALTH SERVICE, RED CROSS; ROCKEFELLER FOUNDATION.

HEART DISEASES. See MEDICINE AND SURGERY under *Coronary Circulation*.

HEATING AND VENTILATING. The war affected heating and air conditioning in three ways during 1941: (1) the large volume of building, especially for manufacturing plants and defense housing, coupled with extremely active private building, made the year the greatest ever experienced by the industry in physical volume of goods produced and sold; (2) the demand for experienced engineers for such specialized work as designing ventilating and air conditioning systems for buildings, war vessels, merchant ships, and so on, finally resulted in a shortage of available engineers, (3) the industry was sharply handicapped by the shortages which developed, especially the scarcity of copper, and to some extent by the restrictions on freon, a refrigerant widely used in air conditioning. Installment selling curbs, instituted in 1941, may have been responsible for slowing down sales of some types of equipment, such as oil burners and room coolers.

Heating. Commercially, 1941 was the heating industry's greatest year. Radiator sales were up 25 per cent over 1940, steel boiler sales rose 50 per cent, unit heaters, used for factory heating, reflected the high volume of industrial building by an 80 per cent increase in sales over the previous year. Residential stoker installations were up 31 per cent, the winter air-conditioning type of warm air furnace showed a gain of 46 per cent, gravity furnaces 18 per cent, and cast iron sectional boilers 8 per cent. Oil burner sales, up 17 per cent, were severely handicapped by the oil-shortage scare at mid-year. The only important decline in heating equipment sales was in unit ventilators which, due to the slowing down of schoolhouse construction, showed a drop of 25 per cent from 1940 levels.

There was a marked decrease in the number of new types of equipment introduced, apparently due to the sellers' market with no need to change designs to move materials. In connection with small low cost defense houses, for which it was claimed there has been no suitable small warm-air furnace burning coal, Public Buildings Administration engineers developed an 18-inch furnace now being made by several manufacturers.

House chimney draft, a subject greatly neglected in past research, was investigated during the year by the National Bureau of Standards. At the University of Illinois a residence built for the purpose was dedicated early in the year for use in conduct-

ing research on radiator heating, a project sponsored by the boiler and radiator manufacturers. The first studies were those on hot-water heating; some results of these tests were reported at the close of the year. But progress in hot-water heating was not confined to house heating for high-pressure, high-temperature hot-water heating, originally developed in Europe, was applied to a few industrial plants in the United States during 1941.

A short-cut method of estimating heat losses for sizing warm-air heating systems was developed by the research staff at the University of Illinois and officially adopted by the warm-air furnace manufacturers association. A slow but steady increase in installations of radiant heating is noted, these systems now number over two hundred in this country. Central station or district heating continued practically unchanged, except that in New York the steam corporation reported many change-overs from privately-operated heating plants burning oil to the utility's steam lines, another result of the oil-shortage alarm.

Ventilating. The growth of mechanical ventilation is indicated by 1941 sales of two types of fans. Blower type fans, used for central system ventilation, had sales up 28 per cent over 1940, while the axial or propeller type increased 123 per cent.

Toxic dusts and gases are found in numerous industries, and the list of these is still growing. War work during the year brought to light at least two relatively new toxic gases, both in foundries; one in connection with magnesium casting is being carefully watched, the other, now found where thin castings requiring smooth finishes are made, originates with the core wash which breaks down under heating and recombines to form phosgene. The latter, too, is under observation. With each type of dangerous dust or gas it is necessary to determine just what the allowable concentration is, so that the ventilating system can be properly designed. During 1941 the American Standards Association set up a committee to set the limits of concentration, following study, for eight toxic substances used in war industries.

Microscopic and ultra-microscopic dust particles have harmful effects on many substances, materials and organisms, and probably only the borders of this field of knowledge have been explored. Considerable gains were made during the year in applications of electrostatic precipitators which clean the air of these fine particles and the specific uses to which they are being put increased greatly. The same is true to a somewhat lesser extent of the older types of air cleaners which, since they are not so new, show a less striking advance.

Odor removal in connection with ventilation or air conditioning reached a relatively high stage of development in 1941. A new portable odor adsorber was introduced; an outstanding installation of the conventional canisters of activated carbon for odor adsorption was made in the new Criminal Courts Building in New York which houses the jail replacing the old Tombs.

Air Conditioning. Industrial air conditioning is reported as 76 per cent higher than in 1940 and seven times as high as in 1934, reflecting the rapidly-growing awareness of the part air conditioning can play in increasing production, not so much from the standpoint of comfort as for improving process conditions. In these applications one or more of the following functions may be used separately or in combination: cooling, heating, humidifying, dehumidifying, cleaning, circulation, bacteria control, and even barometric pressure control.

Among the important process applications in 1941 were those for conditioning the air in spaces for storing bombs, loading fuses, airplane engine testing, powder drying, super-precision metal working, chemical works, a copper mine, instrument plants, and many others. Drying of the air supplied to blast furnaces, which increases the output of the furnace at least 10 per cent, was applied to several units during the year. The windowless blackout plant must be air conditioned and a number of these were built. Among especially large air-conditioned plants, all for plane or engine production, were the Ford Pratt & Whitney engine plant in Detroit, the Douglas factory in California, Wright's Lockland plant, Curtiss-Wright's Columbus plant, a new Glenn Martin plant, two Boeing plants, three Studebaker plants, and a Buick plant.

Chemical dehumidifying made a place for itself in numerous industrial applications. An important nonindustrial installation was that in the new War Department building in Washington where comfort was the objective.

There were two important developments in new equipment. To overcome the economic loss in space occupied by the large ducts in large air-conditioned commercial buildings, a method employing small conduits, through which chilled air at high velocity and under pressure is carried to a mixing device in the room where the air is tempered to the desired temperature, was introduced. An absorption type summer-winter conditioner, gas-fired, for residential use, made its appearance also. In addition there were two minor new equipments: one was equipment for utilizing the waste heat from the jacket of Diesel engines for building heating; the other for use in buildings used a few hours per day or week, such as churches and mortuaries, and which uses a small cooling plant which operates a high number of hours to build up ice on coils to a sufficient thickness to carry the cooling load of short duration. See GAS INDUSTRY.

CLIFFORD STROCK.

HEILUNGKIANG. See CHINA under *Area and Population*.

HEJAZ. See ARABIA under *Saudi Arabia*.

HELIUM. See MINES, BUREAU OF.

HEPARIN. See MEDICINE AND SURGERY under *Advances in Surgery*.

HEREDITY. See ZOOLOGY.

HEROIN. See NARCOTIC DRUGS CONTROL.

HESSÉ. See GERMANY under *Area and Population*.

HIDES AND SKINS. See LEATHER; LIVESTOCK under *Foreign Trade*.

HIGHWAYS. See ROADS AND STREETS.

HISTORY. For books on history published during the year see the articles on literature. For events, see the sections on *History* under each country.

HOARDING. See FASHION EVENTS.

HOCKEY. The Boston Bruins completely dominated the ice hockey campaign in 1941, winning the Stanley Cup with ease, after topping the National Hockey League, and then going on to conquer in the complicated play-off session, which annually makes a joke of the regular schedule. The Boston six had a five-point margin over the Toronto Maple Leafs at the end of the regular season, 67 to 62, with the Detroit Red Wings and the New York Rangers following. In the postseason play-offs, form was well maintained, with the Bruins defeating the Red Wings in four straight games for the Stanley Cup, after defeating Toronto, four games to three, for the league championship. The Boston club also scooped up most of the individual laurels,

with the Hart Trophy, for most valuable player, going to the Bruin center, Bill Cowley, and the Lady Byng Trophy, for best conduct, going to Bruin Bobby Bauer, right wing. The Bruins also went twenty-three games at one stretch without a defeat, bettering a 1940 mark set by the Rangers by four games. Walter Broda of the Toronto team won the goal-tending award, and the Calder Trophy for the season's best rookie, was sent to Johnny Oulry of the Canadiens.

The Cleveland Barons led all the way to take the championship of the American Hockey League, entering the final by eliminating Providence and then whipping Hershey. And St. Louis won the American Association championship while the Allan Cup, emblematic of Canadian amateur supremacy, fell to the Regina Rangers, who came from behind with three straight after losing the first two and tying the third against the Sydney Millionaires. The junior championship and Memorial Cup, Canadian fixtures, were taken by Winnipeg.

Hockey suffered considerably from the war, because most of the best players are Canadians. And the Canadian colleges were inactive, meaning that the United States colleges were on their own. Princeton won the title.

HOGS. See GARBAGE AND REFUSE DISPOSAL, LIVESTOCK; VETERINARY MEDICINE.

HOLIDAYS. In the United States, holidays are designated by the legislatures of the various States or proclaimed by their respective governors. The legal holidays observed in two or more of the States are listed below, with dates for the year 1942. Those marked with an asterisk (*) are celebrated in all States.

- *New Year's Day, January 1 (Thursday)
- Lee's Birthday, January 19 (Monday)
- Lincoln's Birthday, February 12 (Thursday)
- *Washington's Birthday, February 22 (Sunday)
- Good Friday, April 3 (the Friday before Easter)
- Patriots' Day (Battle of Lexington), April 19 (Sunday)
- Confederate Memorial Day, April 26 (Sunday) in Alabama, Florida, Georgia, and Mississippi, May 8 (the second Friday in May) in Tennessee, May 10 (Sunday) in North Carolina and South Carolina; June 3 (Wednesday) in Louisiana.
- Decoration Day (Memorial Day), May 30 (Saturday)
- Jefferson Davis's Birthday, June 3 (Wednesday)
- Flag Day, June 14 (Sunday)
- *Independence Day, July 4 (Saturday)
- *Labor Day, September 7 (the first Monday in September)
- Columbus Day, October 12 (Monday)
- Election Day, November 3 (Tuesday after the first Monday in November)
- *Armistice Day (Victory Day), November 11 (Wednesday)
- *Thanksgiving Day, subject to proclamation (traditionally the last Thursday in November)
- *Christmas Day, December 25 (Friday)

A number of days, while not constituted as legal holidays, are widely celebrated throughout the country. Among these are Arbor Day (in the spring), Army Day (April 6), Father's Day (the third Sunday in June), Halloween (October 31), May Day (May 1), Mother's Day (the second Sunday in May), Pan American Day (April 14), Pulaski Day (October 11), St. Patrick's Day (March 17), and St. Valentine's Day (February 14). In the British Empire, the outstanding holidays are, in addition to church festivals, Victoria or Empire Day (May 24) and the King's Birthday, arbitrarily celebrated on June 12.

Thanksgiving Day, 1941. In 1941 President Roosevelt repeated his practice of the previous two years by proclaiming November 20 as Thanksgiving Day instead of the traditional last Thursday of November; 32 States followed him by celebrating No-

ember 20, while the remainder adhered to November 27. The President announced that in future the last Thursday of November would be observed. On December 26 legislation declaring that the fourth Thursday in each November shall be Thanksgiving Day was signed by President Roosevelt.

HOMICIDES. See PRISONS; VITAL STATISTICS.

HONAN. See CHINA under *Area and Population*.

HONDURAS. A Central American republic. Capital, Tegucigalpa.

Area and Population. Area, 46,332 square miles. Population, estimated at 1,038,061 on June 30, 1940 (854,154 in 1930). The people are mainly of mixed Spanish and Indian blood, except for a considerable Negro element in the north coast banana region and some 35,000 aborigines. Population of Tegucigalpa (with suburbs), 47,223 in 1940; of other cities in 1935: Comayagua, 15,095; San Pedro Sula, 32,721; Tela, 14,460.

Defense. Every male citizen is liable to six months compulsory military service at the age of 21 and to service in the reserves from 23 to 40. As of Nov. 1, 1940, the army comprised 2,325 active soldiers and about 2,600 trained reserves. Defense budget for 1941-42, 2,368,000 lempiras

Education and Religion. According to the 1935 census, about 67 per cent of the inhabitants over seven years old were illiterate. Of 102,651 children of school age in 1937-38, 47,764 were receiving instruction. Secondary, normal, and commercial schools had 2,239 students and the National University at Tegucigalpa 298. Roman Catholicism is the prevailing religious faith.

Production. Agriculture, stock raising, and mining are the chief occupations. Bananas accounted for 65.5 per cent of all exports in 1939-40 and silver for 15 per cent. The sigatoka (leafspot) diseases reduced banana exports from 29,083,665 stems worth \$22,981,400 in 1929-30 to 12,677,737 stems worth \$6,323,144 in 1939-40. Gold, coffee, live-stock, tobacco, hardwoods, coconuts, and grapefruit are other export products, while corn, beans, sugar, etc., are grown for local consumption.

Foreign Trade. For the year ended June 30, 1940, imports were \$10,085,069; exports, \$9,657,294. Besides bananas (see *Production*), the chief exports were silver (\$1,447,114) and gold (\$863,975). The United States supplied 62.7 per cent of the imports; Japan, 13 2; Germany, 6.5. Of the exports, 95 6 per cent went to the United States.

Finance. Budget estimates for 1940-41 and 1941-42 balanced at 10,848,000 and 11,446,000 lempiras, respectively. For 1939-40 actual revenues were 10,843,000 lempiras; expenditures, 12,041,000. For the years 1935-36 to 1939-40, the accumulated budget deficit was 8,456,000 lempiras. Public debt on June 30, 1940: internal, 12,306,849 lempiras; external, 5,123,875. The lempira exchanged at \$0.50 in 1939 and 1940.

Transportation. Railways extended 816 miles in 1941; highways, 693 miles. The TACA airways network links Tegucigalpa with all parts of Honduras and the chief centers of Nicaragua and El Salvador. Pan American Airways planes stop at Tegucigalpa. The chief ports are Tela and Puerto Cortes on the Caribbean and Amapala on the Pacific.

Government. President in 1941, Gen. Tiburcio Carías Andino (Nationalist), who was elected Oct. 30, 1932, for a four-year term. By constitutional amendment, his term was extended in 1936 for a further six years and in December, 1939, until Jan-

uary, 1949. The Constitution of Apr. 15, 1936, extended the terms of the President, Vice-President, and members of Congress from four to six years; it stipulated that the Constituent Assembly of 59 members (all Nationalists) should automatically become the regular National Congress with the members holding office until Dec. 4, 1942.

History. Continuing its policy of close cooperation with the United States, President Carías Andino's dictatorial government during 1941 gradually drifted into open hostilities with the Axis powers. Early in the year a stricter curb was placed on German agents and on the anti-United States activities of the German colony in Honduras. In February visas granted to 35 German "tourists" by the Honduran consul in Hamburg were cancelled in Tegucigalpa. Christian Zinsser, German chargé d'affaires in Tegucigalpa, left Honduras on March 14 after having been declared *persona non grata* by the government for his propaganda activities. Berlin retaliated by expelling the Honduran consul in Hamburg. The Honduran Government then forbade Hondurans to employ German and Italian citizens, with the result that many were forced to leave the country.

Following similar action by the United States, President Carías Andino on June 28 ordered the closing of the two German and two Italian consulates in Honduras. On July 29 the President declared that if the United States entered the war, Honduras "would maintain solidarity" with that country. The United States black list in September forced a German firm which had a monopoly on transportation between Tegucigalpa and the Pacific port of Amapala to sell out to Honduras.

Addressing the opening session of Congress on December 4, President Carías Andino charged that enemies of his Government were working with Nazi and Fascist agents, who sought to provoke internal disturbances in Central America in order to place pro-Axis governments in power. He said the Honduran Government would be in complete accord with Washington's policy at all times and in all circumstances. In line with this declaration, the Honduran Congress unanimously declared war on Japan (December 8) and on Germany and Italy (December 12).

See ARCHAEOLOGY; LEND-LEASE ADMINISTRATION.

HONDURAS, British. See BRITISH HONDURAS.

HONG KONG. A British crown colony comprising the island of Hong Kong (32 sq. mi.), Old Kowloon (3 sq. mi.), and the New Territories (356 sq. mi.) leased from China (June 8, 1898) for 99 years. Total area, 391 square miles; total population (1939 estimate, excluding the garrison and 750,000 refugees from China), 1,050,256, of whom 1,026,645 were Chinese and 23,611 non-Chinese. A rough census, taken during 1941 for defense purposes, revealed that there were approximately 2,000,000 people living in the colony. Capital, Victoria. Vital statistics (1939): 46,675 births and 48,283 deaths. Education (1939): 118,193 students in schools of all kinds.

Production and Trade. Twenty per cent (50,187 acres) of the area is under cultivation, the main crops being rice, sweet potatoes, groundnuts, sugar cane, and fruits. Fishing and shipbuilding are important industries. There are factories where cement, flashlights, rubber shoes, matches, gas respirators, and war implements are produced. Trade (1940): HK\$752,880,000 for imports and HK\$622,320,000 for exports (HK\$ averaged

\$0.2298 for 1940). Shipping (1939): 29,198,466 tons entered and cleared. Roads (1940): 384 miles.

Government. Budget (year ending Mar. 31, 1942): HK\$56,786,000 for revenue and HK\$60,-642,715 for expenditure. Public debt (1940): HK\$27,000,000. The colony is administered under Letters Patent of Feb. 14, 1917, and Royal Instructions of the same and following dates, by a governor, aided by an executive council of 9 members. There are 17 members in the legislative council, of which the governor is president. Governor, Sir Mark Young (appointment announced during July, 1941), succeeded Sir Geoffry Northcote who retired for reasons of health.

History. The 100th anniversary of the founding of Hong Kong as a British colony occurred on Jan. 26, 1941. This was the date, 100 years ago, of the British landing. Messages were exchanged between the King and the legislative council of Hong Kong, the latter body passing a special resolution reaffirming the colony's loyalty to the British Crown.

On Mar. 15, 1941, Sir Geoffry Northcote, the governor, who had recently returned from England and Singapore, announced that the colony's assignment in the event of war in the Pacific was to fight. He added, "Certainly we are prepared to defend Hong Kong and we are in a position to do so. I see no reason why such an occasion should arise, but if it does we can hit back." The defenses of the colony continued to be strengthened during 1941. Additional guns of various types were added and a defense plan was adopted for the use of almost all able-bodied male Europeans, many British women, and thousands of British Chinese.

Emergency food stocks were accumulated, miles of air-raid tunnels constructed, small air-raid shelters built, enormous amounts of ammunition stored, and night-raid precautions perfected by frequent blackout drills. All approaches to Hong Kong were mined and Hong Kong Island became a fortress similar to Malta. On Apr. 2, 1941, a wartime measure forbade the export from Hong Kong of a long list of commodities, except by special license. The list included many foodstuffs; iron, steel, non-ferrous metals, and certain alloys; animal, vegetable, and fish oils; fuels, fertilizers, explosives, hides, skins, industrial diamonds, machine tools, plywood, rubber tires, etc.

It was announced in April of 1941 that during 1940 Hong Kong had contributed £400,000 to the Imperial Treasury and, in addition, £100,000 was raised by voluntary subscription for the bomber fund. Other emergency measures were taken to conserve sugar, fish, salt, and other foodstuffs. The Hong Kong government, on Nov. 25, 1941, told the Chinese population what to do in the event of an air attack.

War came to Hong Kong on Dec. 8, 1941, when 9 Japanese planes bombed Kowloon. The Japanese land forces attacked the mainland at Kowloon and after several days fighting the British forces withdrew to the island of Hong Kong where they were under siege until Dec. 25, 1941, when the British Colonial Office in London announced that Sir Mark Young, the governor, had been advised by the naval and military commanders at Hong Kong that further effective resistance was impossible and that he had arranged a negotiated surrender with the Japanese. See JAPAN under *History*; WORLD WAR.

HOPEI. See CHINA under *Area and Population*.

HORSES AND MULES. See LIVESTOCK; VETERINARY MEDICINE. For statistics, see the principal countries under *Production*. For HORSE RACING, see RACING.

HORTICULTURE. The following table, compiled from data released by the U.S. Department of Agriculture, shows that the 1941 fruit crop was apparently the largest yet produced. The total tonnage of fruit was estimated to be 5 per cent over production figures of 1940, although only 2 to 3 per cent above the record crops of 1937 and 1939. Peaches, pears, grapes, cherries, plums showed increased harvest, while prunes and apricots were somewhat under normal production. Citrus fruits were assumed to be only slightly (2 or 3 per cent) under the record haul of 1940-41. Prices, on the average, remained stable throughout the year.

Crop	1941	Unit	1940
Apples	126,076,000	Bu	114,391,000
Peaches	69,610,000	"	54,430,000
Pears	30,819,000	"	31,622,000
Grapes	2,651,430	Tons	2,547,910
Cherries	162,810	"	178,310
Prunes (dried)	188,410	"	177,710
Oranges	84,482,000	Boxes	84,082,000
Grapefruit	41,490,000	"	43,033,000
Lemons	14,680,000	"	17,099,000
Cranberries	743,200	Bbl	580,500
Pecans	86,201,000	Lb.	88,426,000

Total value of sales of commercial truck crops in 1941 was \$354,153,000, as compared with \$284,029,000 in 1940 and the ten-year average, 1930-39, of \$231,557,000, according to the U.S. Department of Agriculture. The following table gives an excellent picture of how truck crop prices increased for the year.

Crop	1941	Unit	1940
Strawberries	\$34,352,000	Crates	\$34,198,000
Asparagus	17,297,000	"	15,984,000
Beans (Snap)	26,747,000	Bu	22,467,000
Beets	2,325,000	"	1,884,000
Cabbage	23,678,000	Tons	15,072,000
Cauliflower	7,193,000	Crates	5,722,000
Cantaloupes	16,547,000	"	14,316,000
Celery	26,331,000	"	21,988,000
Lettuce	39,136,000	"	32,187,000
Onions	27,247,000	Sacks	21,247,000
Peas	26,664,000	Bu	24,196,000
Spinach	6,663,000	"	6,756,000
Tomatoes	78,483,000	"	56,631,000
Watermelons	9,052,000	Melons	8,059,000

Foreign Trade. It was estimated that exports of fruits and fruit preparations dropped 59 per cent in 1941. For the nine-month period ending September, 1941, exports of fruits and preparations totaled \$24,868,002, while vegetables and preparations came to \$22,957,048. Imports of fruits and preparations were \$33,360,456, vegetables and preparations, \$14,855,378.

See BOTANY, ENTOMOLOGY, ECONOMIC.

HOSIERY. See CHEMISTRY, INDUSTRIAL under *Textiles*; TEXTILES under *Silk*.

HOSPITALS. See ARCHITECTURE under *Community Buildings*. Also, compare medical topics.

HOURS OF WORK. See LABOR CONDITIONS under *Hours of Work*; LABOR LEGISLATION; WAGE AND HOUR DIVISION.

HOUSING. See ARCHITECTURE; BUILDING; CONSUMERS' COOPERATIVES; FEDERAL HOUSING ADMINISTRATION; HOUSING AUTHORITY, U.S.; LIVING COSTS; NATIONAL BUREAU OF STANDARDS; PHILANTHROPY under *Buhl Foundation*. For DEFENSE HOUSING, see ARCHITECTURE under *Defense Housing*; HEATING AND VENTILATING; PLANNING; SEWERAGE, UNITED STATES under *Legislation*.

HOUSING AUTHORITY, U.S. (USHA). The United States Housing Authority was created in 1937 as a permanent Federal corporation to assist the several States and their political subdivisions "to remedy the unsafe and insanitary housing conditions and

the acute shortage of decent, safe, and sanitary dwellings for families of low income, in rural or urban communities, that are injurious to the health, safety, and morals of the citizens of the Nation" and "to alleviate present and recurring unemployment."

To achieve these purposes the USHA assists local public agencies (known as "Local Housing Authorities") set up under local law and responsible for planning, building, and operating the new housing, in two ways: First, it makes loans, at low interest, for 90 per cent of the cost of their slum-clearance and low-rent housing projects (which must include the elimination of unsafe and insanitary dwellings in the locality in the same number as the number of new dwellings provided by the project). Second, after the new homes are completed, the USHA makes annual contributions to enable Local Authorities to operate their projects at rents within reach of low-income families from substandard quarters.

At present 39 States, the District of Columbia, Hawaii, Puerto Rico, and the Virgin Islands have low-rent housing legislation. The number of Local Authorities established has reached a total of 616. By the end of December, 1941, 360 urban and rural Local Authorities in all parts of the country had USHA assistance contracts covering 739 projects to house 182,600 low-income families. These contracts amounted to a total of \$756,996,000 out of a \$800,000,000 USHA loan authorization. Under these contracts 142,266 family units were under construction or completed by the end of December; and 97,527 low-income families had moved from unfit quarters into decent new homes.

Only low-income families from substandard housing are eligible as tenants in USHA-aided homes. The rents achieved in the projects have set an all-time low for decent new housing, public or private. In urban slum-clearance projects with rents approved by Dec. 31, 1941, the average monthly shelter rent, excluding utilities, was only \$12.64 per family. The anticipated average family income in the projects with rents approved is \$818 a year, though some families with annual incomes as low as \$300 and \$400 are being served.

The average net construction cost on the 462 USHA-aided projects under construction or completed by the end of December, 1941, was only \$2,726 per dwelling unit. This figure is about 24 per cent lower than the comparable cost of new private housing in the same communities—despite the fact that USHA-aided projects, unlike much private construction, are built for a long life, by labor paid prevailing wages. Meanwhile 87,552 dangerously unsafe and insanitary slum quarters had already been eliminated under local programs as required by the Housing Act.

Authority for utilizing the Nation-wide public housing framework in the solution of housing needs arising from the national defense emergency was provided in legislation enacted by the Congress in 1940 and 1941. By the end of December, 1941, 20 USHA-aided projects, comprising 6,344 family units, had already been opened for occupancy for defense workers and their families and 88 other projects with 23,371 dwelling units were either completed or under construction out of Lanhani Act funds.

Widespread housing needs of both permanent and emergency character thus continued to be met under the USHA program during 1941. Significantly, where emergency needs were being satisfied, there was assurance that the accommodations provided would be available to low-income fami-

lies from the slums as soon as—and long after—the defense emergency is over. See ARCHITECTURE. NATHAN STRAUS.

HOWLAND ISLAND. A mid-Pacific island (0° 49' N. and 176° 40' W.), belonging to the United States. It lies athwart the main steamship lanes and the Pan American Airways route from Honolulu to New Zealand and Australia. An aerological station was established here during 1936 by the U.S. Department of the Interior (see YEAR BOOK for 1936, p. 79, under BAKER, HOWLAND, AND JARVIS ISLANDS). An airfield was constructed during 1937.

HUMANITIES. See PHILOLOGY, CLASSICAL; ROCKEFELLER FOUNDATION.

HUNAN. See CHINA under *Area and Population*.

HUNGARY. A kingdom in central Europe. Capital, Budapest. Regent in 1941, Nicholas Horthy de Nagybanya.

Area and Population. As of Sept. 1, 1940, the area of Hungary was 61,872 square miles and its population about 12,708,439. Of this total, 4,605 square miles and 1,044,438 inhabitants were ceded by Czecho-Slovakia under the Italo-German arbitral award of Nov. 2, 1938. Another 4,690 square miles with a population of 671,962 were acquired through annexation of Ruthenia (Carpatho-Ukraine) and additional parts of Slovakia in March-April, 1939. On Aug. 30, 1940, an Italo-German award transferred to Hungary from Rumania 16,642 square miles in Northern Transylvania with 2,392,603 inhabitants. In April, 1941, Hungarian troops occupied the Yugoslav counties of Backska, Banat, and Baranya, with a population of about 1,200,000.

Living births in 1939 numbered 172,628 (18.9 per 1,000) for that part of Hungary within the frontiers of the Treaty of Trianon; deaths, 123,135 (13.5 per 1,000); marriages totaled 73,287 (8.1 per 1,000) in 1938. Populations of the chief cities at the census of Nov. 18, 1939, were: Budapest, 1,115,877; Szeged, 131,893; Debrecen, 122,517; Pestszenterzsebét, 71,150; Kecskemét, 83,732; Kispeszt, 62,797; Újpest, 72,940; Pécs, 70,547; Miskolc, 73,503.

Defense. As of Jan. 1, 1941, the active army was estimated at 200,000; trained reserves, 1,100,000, active air force, 6,000. Compulsory military service was reintroduced Jan. 28, 1939. Military appropriation for 1941, 385,838,000 pengos. There were four police patrol craft on the Danube but no naval vessels.

Education and Religion. The 1930 census showed 9.6 per cent of the population over six years of age to be illiterate. In 1938-39 there were 1,407 infants' schools with 133,288 children, 8,103 elementary schools with 1,104,916 pupils, 263 middle schools with 79,435 pupils, numerous primary and secondary vocational and special schools, five state-supported universities with 9,823 students (excluding the University of Kolozsvár in Northern Transylvania, acquired from Rumania on Aug. 30, 1940), and 29 theological colleges with 1,229 students.

According to the 1930 census, Roman Catholics comprised 64.9 per cent of the population within the Treaty of Trianon boundaries, Helvetian Evangelicals 20.9 per cent, Augsburg Evangelicals 6.1 per cent, Jews 5.1 per cent, Greek Catholics 2.3 per cent.

Production. Slightly more than half of the working population is engaged in agriculture and nearly one-fourth in industry and mining. Estimated yields of the chief crops in 1940, including all annexed

territories except Northern Transylvania, were (in metric tons): Wheat, 2,067,463; rye, 724,122; barley, 693,102; oats, 434,324; corn, 2,964,038; potatoes, 3,441,353; sugar beets, 1,758,209; tobacco, 16,548; fodder turnips, 3,975,845 in 1939. The wine output in 1939 was 96,145,590 gal. The same territory had 2,605,490 cattle, 1,750,221 sheep, 4,648,463 swine, and 989,450 horses in 1940. An area of 4,921,762 acres was under forest. The production of coal in 1939 was 10,625,452 metric tons; lignite in 1940, 10,308,000 metric tons; bauxite in 1939, 500,193 tons. There were 4,334 factories in 1939, employing 341,636 workmen. The principal manufacturing lines are milling, distilling, sugar refining (130,400 metric tons in 1939), iron and steel, hemp and flax. Pig iron production was 409,292 metric tons in 1939; steel, 732,615 metric tons.

Foreign Trade. According to preliminary returns, imports in 1940 totaled 597,700,000 pengös (489,900,000 in 1939); exports, 503,600,000 (603,700,000 in 1939). In millions of pengös, the leading 1940 imports were: Machinery and apparatus, 47.5; coal and coke, 45.4; wood and timber, 37.8; paper, wood pulp, etc., 36.1 nonferrous metals (except iron), 32; pig iron, iron products, etc., 26.4. Chief exports (in million pengös): Live animals, 89.9; food of animal origin, 71.7; wheat and flour, 59.7; machinery and apparatus, 32.5; feathers, 22.2; iron products, 20.9. Leading sources of 1940 imports (in million pengös): Germany, 316.3; Italy, 55.7; United States, 35.5; Yugoslavia, 33.1; Czecho-Slovakia, 24.4; Rumania, 23.8. Distribution of exports (million pengös): Germany, 249.0; Italy, 76.4; Switzerland, 32.2; Yugoslavia, 22.3; Czecho-Slovakia, 14.9; United Kingdom, 11.7.

Finance. For the calendar year 1941 budget estimates anticipated receipts of 2,036,230,000 pengös and expenditures of 2,084,442,000. The public debt on June 30, 1940, totaled 2,514,498,003 pengös (foreign, 949,800,000; domestic, 1,564,700,000), compared with 2,088,527,230 pengös on June 30, 1939. The average exchange value of the pengö was \$0.1924 in 1939 and \$0.1848 (nominal) in 1940.

Transportation. Excluding Northern Transylvania, the railway trackage in 1940 extended 9,321 miles (mostly state-owned). There were 51,049 miles of roads. Air lines connect Budapest with the principal Hungarian cities and with Vienna, Breslau, and Berlin. The Danube and its tributaries form an important transportation artery.

Government. The monarchical constitution in effect prior to the republican revolution of Oct. 31, 1918, was restored in 1920, but the throne remained vacant. The head of the state in 1941 was the Regent, Admiral Horthy (elected Mar. 1, 1920). A law of July 15, 1937, ended the Regent's responsibility to Parliament. Parliament consisted in 1941 of an Upper House of about 290 members (76 elected by counties and cities, 62 life members appointed by the Regent, and the rest representing various privileged groups) and a Lower Chamber of 335 members, including representatives of annexed territories, chosen for five years by popular male and female suffrage. In 1939 the secret ballot was introduced for the election of Deputies. The Upper Chamber is partly reconstituted every five years.

The composition of the Lower Chamber at the beginning of 1941 was: Party of Hungarian Life (government party), 184; Transylvanian bloc, 42; Cross Arrow party (National Socialists), 42; Hungarian Renaissance party, 17; Independent Farmers, 14; United Christian People's party, 8; Ruthe-

nian bloc, 7; Social Democrats, 5; Civil Liberty party, 5; others, 11. Premier at the beginning of 1941, Count Paul Teleki (appointed Feb. 16, 1939). See below for developments in 1941.

HISTORY

Hungary, by the side of Germany, made war in 1941 successively on Yugoslavia and on Russia. It augmented its territories with a strip of northern Yugoslavia which Hungary had itself ceded in the territorial shifts following the previous European war; but the aim to recover the lost soil still in Rumanian possession did not come to the same quick fulfillment, and indeed it remained uncertain at the end of the year what recompense Hungary might expect for the cost of her help against Russia.

Hungarian help to Germany against Russia cost the giver more, in disturbance of national policies and internal antagonisms than even in the drain on economic and human resources. It involved challenging anew the Hungarian radical peasants, with whom the governing landholders had sought for years to establish a basis of mutual toleration. Similarly, cooperation against Yugoslavia compelled the breaking of a freshly signed pact of "eternal friendship" with the Government of that neighboring state and potentially useful friend. Indeed the advent of close military cooperation with Germany drew Hungary so strongly under German domination as very nearly to suspend the exercise of anything like a national will. The political disaster of entanglement in the German orbit was reflected in the suicide of Count Teleki, Hungarian Premier, in protest against German demands for Hungary's participation in war on Yugoslavia.

Failure of Teleki's Policies. Premier Teleki's last conspicuous manifestation of a nationalist policy at variance with the intentions of the German Government was the conclusion of the treaty of friendship with Yugoslavia on Dec. 12, 1940. Count Stephen Csaky, Teleki's Foreign Minister, in whose department the negotiation of the treaty particularly lay, ranked in general opinion as pro-German, but was at the same time keenly and above all pro-Hungarian. His diplomatic course had led to frequent yielding to Germany in 1940 but seldom if ever to yielding where another method would avail. Csaky's death, Jan. 27, 1941, cost the Ministry a member that it could ill spare.

His successor, Ladislaus de Bardossy, taking office February 4, was called within a few weeks to a conference with German leaders in Munich. There, March 21-23, took shape an arrangement to put Hungary into the ranks of the belligerents on Germany's side; the negotiators did not officially announce what happened at Munich, but the sequel came swiftly. A German note, delivered on March 31, reportedly presented a formal demand for immediate military cooperation on the part of Hungary. Premier Teleki told the Cabinet, April 2, that the outlook was hopeless. He ended his life with a pistol in the night that followed. De Bardossy became Premier, April 4, by appointment of Regent Nicholas Horthy. Within a few days thereafter, German forces peaceably occupied vital points in the country, forestalling any chance of an uprising against the new domination. The British Government broke off relations with Hungary on April 7, and simultaneously hostilities with Yugoslavia began.

Hungary at War. For Hungary's part in the military operations of 1941, see WORLD WAR. The war against Yugoslavia was brief and fruitful. Hostilities with the regular forces of that country lasted less than a fortnight. The Hungarian troops aided

Germany by invading and occupying, without grave difficulty, the formerly Hungarian area north and northwest of Belgrade. Popular sentiment warmly approved the reconquest of this territory lost in the settlements that had followed the war of 1914-18. The Yugoslav forces, overwhelmed elsewhere, lacked men and arms for adequate resistance. On April 12 the Russian Government, through a published declaration, notified Hungary of its disapproval of the latter's attack on Yugoslavia. A Hungarian official statement of April 15 defended the invasion, saying that the overthrow of the regency in Yugoslavia and the secession of Croatia had left that country without any government able to protect the population of the districts that the Hungarian troops entered. In May an agreement with Germany assigned to Hungary a liability of 1,600,000 crowns of the public debt of the former Yugoslavia and, in the way of compensation for this burden, granted all state assets in the territory under Hungarian occupation. In its economic effect, the acquired area tended normally to augment the Hungarian surplus production of foods. One potentially serious difficulty attended the territorial acquisitions: The Rumanian Government showed itself desirous of getting, through German influence, a part of what Hungary had taken from the Yugoslavs.

Hungary would no doubt have refrained from further part in Germany's wars. But this it could not well do; once enlisted, the country found itself bound to continue in active service. Hungary broke off relations with Russia, June 23. Four days later Premier de Bardossy told Parliament that war with Russia had started. With less political difficulty than in April, the country joined the German attack on this second and more dangerous opponent. However Hungary's actual military contribution was limited. The widespread survival of communistic sympathies among the hired workers in Hungarian agriculture and factories assured Russia of many friends among the Magyars themselves. Sending away too many soldiers, under these circumstances, would invite a new Communist revolution like the reign of Bela Kun. At the very outset of war with Russia an outbreak of bombing caused reported explosions among munitions and in a refinery of petroleum. In November came a report via Istanbul that six big Hungarian factories had been bombed or set on fire. Hungary therefore conserved its military resources as a precaution against a possible Axis defeat.

At the same time it was obliged to link its political future more firmly with the Reich. On November 25 the Government joined in the ceremonies in Berlin extending the Anti-Comintern Pact for another five years. On December 6 Great Britain declared war on Hungary when it refused to end hostilities with Russia. The Budapest Government followed Germany still farther on December 13 by declaring war on the United States. This policy of political subservience to Berlin further alienated Hungarian exiles abroad. In October a Free Hungary movement was launched under the leadership of Count Michael Karolyi in London and Dr. Tibor Eckhardt in the United States.

Racial and Political Groups. Locally strong minorities received conciliatory treatment in some respects, prior to German domination. Thus, a decree of March 2 allowed priority to a minority's language in any of the numerous minority schools. Serbians and Jews who had entered after 1918 the territory regained from Yugoslavia, were ordered out of such territory and forbidden to take with them more than small quantities of chattels and

of valuables. A group of some 13,000 Magyars, established in Bukovina for nearly two centuries but still distinct, was "repatriated" into Hungary in June, after the Russian occupation of Bukovina and just before the outset of war with Russia.

The policy as to the Jewish population continued to put restrictions on those of Hungarian citizenship; but for foreign Jews not naturalized, a policy of expulsion was put into effect in August.

See GERMANY, GREAT BRITAIN, RUMANIA, and YUGOSLAVIA, under *History*; CHEMISTRY, INDUSTRIAL; LABOR CONDITIONS under *Wages*; LIVESTOCK; WORLD WAR.

HUNTING. See FISH AND WILDLIFE SERVICE; PHILANTHROPY.

HUPEH. See CHINA under *Area and Population*.

HURRICANES. There were six hurricanes in the North Atlantic during September and October, 1941. The first tropical disturbance of the season appeared in the northern Gulf of Mexico on the evening of September 11. This was the first time in over 25 years that the North Atlantic area had been free from tropical disturbances until so late in the season. Annual records from 1887 to the present time show only two other seasons when tropical storms failed to develop before the 11th of September; these seasons were 1907 and 1914 when the first tropical disturbances were observed on September 16th and 14th, respectively. After this very late start in 1941, four disturbances developed in rapid succession in September and these were followed by two others in October.

The hurricane of September 11-15 began as a Gulf disturbance of slight intensity centered about 120 miles southeast of Port Eads, La. The center moved very slowly toward the Texas coast, and as it approached the coast it decreased greatly in intensity and no property damage or injuries were reported. The lowest observed pressure was 29.61 inches.

The hurricane of September 18-26 started near the same place as the preceding one, that is, about 180 miles south of Port Eads, La. The center first moved southward toward the Yucatan coast and the winds increased to gale force. During the night of September 20-21 the storm turned, and moving northward retraced its path until on the evening of the 21st it was again near the region where first observed; it then took a northwestward course through the western Gulf of Mexico and moved inland on the Texas coast near Madagorda on September 23. After moving inland the storm changed its course and traveled in a northeasterly direction and with a rapidly increasing speed. The storm passed over Lake Huron into Canada on the 25th, but by this time it had lost most of the characteristics of a tropical storm. Most of the damage done by this hurricane was along or near the Gulf coast where it passed inland; damage to tangible property was estimated at over \$2,000,000, while damage to crops was even greater, that to the rice crop alone was \$4,000,000. Due to the wide distribution of warnings, 25,000 people left their homes for safer surroundings and only four people were known to have lost their lives. The lowest recorded pressure along the path of the hurricane was 28.66 inches at the Houston, Texas, Airport and the highest wind velocity recorded was 83 m.p.h. at Texas City; stronger winds were probably experienced closer to the storm center. Tidewater covered all the Galveston Island beaches, much of the island beyond the seawall, and entered the lower residential and business sections of Galves-

ton as backwater from the bay. This was the most destructive hurricane of the season.

There was another hurricane of September 18-26; this second one on these dates was confined to the Atlantic instead of in the Gulf; when first noticed its center was about 150 miles east of Titusville, Fla. Its track was quite unusual, for it first moved northward thence eastward, and on the night of the 20th when the center was about 600 miles east of Jacksonville, Fla., it turned and moved northwestward toward the North Carolina coast; finally on the night of the 22nd it changed its course again and moved northeastward and gradually diminished in intensity. Several ships encountered this storm and a few of them reported winds of force 11; the lowest barometer reading reported was 29.39 inches on September 20. No damage was reported from this hurricane.

The hurricane of September 23-30 started as a slight disturbance 75 miles northwest of Barbados. It moved almost due west passing just south of St. Lucia and into the Caribbean Sea where it developed hurricane intensity. On the morning of the 25th the hurricane-buffed freighter *Ethel Skakel* radioed a distress message from 125 miles north of Aruba, Dutch West Indies, and later went down with her cargo of steel rails; of the crew of 33 men only 13 were rescued. Two other vessels sent distress signals from locations near the path of the storm, and one of these was lost with her entire crew of 27 men. The hurricane continued its westerly course until the morning of the 27th when it was just east of Cape Gracias, Nicaragua; it then moved with increased speed in a northwesterly direction across extreme northern Honduras into the Gulf of Honduras and then across British Honduras into the Bay of Campeche. Finally it diminished in intensity and moved inland into Mexico near Vera Cruz as a weak depression on the 30th. Besides the ships at sea which were lost in this hurricane a large amount of damage was reported along the Central American Coast; the lowest barometer reading was 29.32 inches and estimated winds of over 100 m.p.h. were reported.

The fifth hurricane of the season took place from October 3-12; it was first observed over the Atlantic 300 miles north of the Virgin Islands on the evening of October 3. Moving in a west-northwesterly direction, the storm crossed the Bahama Islands and passed a short distance south of Nassau on October 5, at which time it was a small but highly developed storm. On the 6th it crossed the Everglades south of Lake Okeechobee and passed into the Gulf of Mexico between Everglades City and Fort Myers; curving to the north in the Gulf, the storm center moved up the west Florida coast some distance off shore and moved inland again at Carrabelle. The storm diminished somewhat in intensity at this time but was still accompanied by winds with gusts as high as 75 m.p.h. From Carrabelle, Fla., the storm center moved northeastward across Georgia and into South Carolina and finally into the Atlantic. The lowest pressure observed in this hurricane was 28.48 inches at The Bight on Cat Island, one of the Bahamas, and the highest wind velocity was 102 m.p.h. at Nassau. Considerable damage was caused by this hurricane all along its path and a number of persons were drowned, or injured.

The last hurricane of the season was from October 18-21. This hurricane began off the west Florida coast, then moved north-northwestward and passed inland at Cedar Key. Very heavy rains, from 10 to 15 inches, fell near the center of this storm but the strongest winds were only from 40

to 50 m.p.h., nevertheless considerable damage was done and one person killed.

Tropical storms in the northern half of the Pacific Ocean are known as typhoons. There were at least 18 typhoons in the 1941 season and about half of these were known to have caused considerable damage. See RICE.

RICHMOND T. ZOCH.

ICC. See INTERSTATE COMMERCE COMMISSION.

ICELAND. An island state in the North Atlantic, situated 200 miles east of Greenland and about 540 miles northwest of Scotland. It was occupied by British troops May 10, 1940, and proclaimed a United States protectorate for the duration of the World War on July 7, 1941. Area, 39,709 square miles, only one-fourth of which is habitable. Estimated population in 1941, 120,000. Populations of the chief towns in 1939: Reykjavik (capital), 37,366; Akureyri, 4,930; Hafnarfjordur, 3,652; Vestmannaeyjar, 3,506. Elementary education is compulsory and there is virtually no illiteracy. Reykjavik has a university. Over 98 per cent of the people are members of the Evangelical Lutheran Church.

Production Fishing is the chief industry; it supports nearly 30 per cent of the population directly and provides 85 per cent of the nation's exports. In 1937 the fishing fleet numbered 1,000 craft totaling 22,806 tons and including 38 steam trawlers. About 36 per cent of the inhabitants live by agriculture. Potatoes, turnips, and hay are the principal crops. Sheep raising is an important industry; there were 592,000 sheep in 1938. There are few trees and no mineral resources, but extensive peat deposits are used for fuel and many buildings in Reykjavik are heated by water from hot springs. Manufactures include fish, dairy, food, and foundry products, leather, beverages, clothing, shoes, gloves, ship's equipment and stores, paint, furniture, etc.

Foreign Trade. Imports in 1940 were equivalent to 11,121,000 U.S. dollars (\$10,879,000 in 1939); exports, \$20,447,000 (\$12,294,000 in 1939). In 1939 the United Kingdom supplied 22 per cent of the imports by value, Denmark 21 per cent, Germany 16 per cent. Exports went chiefly to the United Kingdom (17 per cent) and to Denmark, Germany, and the United States, each of which took 11 per cent. In 1940 and 1941 Iceland's trade with Denmark and Germany was almost completely interrupted, while commerce with the United Kingdom and the United States greatly increased. United States exports into Iceland rose from \$442,000 in 1939 to \$2,254,000 in 1940 while United States imports from Iceland were \$1,374,551 in 1939 and \$2,672,774 in 1940. Iceland's exports are mainly fish, cod-liver oil, and other fish products, mutton, wool, sheepskins, horses, furs, and eider down.

Finance. Budget estimates for 1941 placed revenues at 18,478,173 Icelandic crowns and expenditures at 18,016,263 crowns (18,594,830 and 17,857,448, respectively, in 1940). The total public and state-guaranteed debt on Jan. 1, 1940, was 56,648,000 crowns (foreign, 49,245,000; domestic, 7,403,000). Official exchange rate of the crown (krona) in 1941, 6.505 crowns equal 1 U.S. dollar, or 1 crown equals \$0.1537.

Transportation. There are no railways. In 1940 there were about 3,000 miles of highways, with 2,288 motor vehicles. A fleet of small Icelandic merchant vessels provides shipping services to the United States and Great Britain. Coastal shipping and a local air line help to maintain communication between Iceland's chief towns. There are nearly 10,000 miles of telephone and telegraph lines.

Government. The Constitution of May 18, 1920 (amended in 1934) provides for a constitutional monarchy. The King exercises executive power through a responsible Cabinet. Legislative power rests conjointly with the King and the Althing, the oldest parliament in the world, established 930 A.D. The Althing consists of 49 members elected by the people. One-third of its members are elected to the upper chamber by the whole Althing; the other two-thirds form the lower chamber. Premier in 1941, Hermann Jónasson (Progressive), heading a coalition Government representing all parties except the Communists, who held three seats in the Althing.

Iceland was acknowledged by the Act of Union of Nov. 30, 1918, to be an independent, sovereign state having a personal union with Denmark through a common king. This treaty expires in 1943, when it may be denounced by either Iceland or Denmark. In 1938 the Althing voted to terminate the union with Denmark upon expiration of the treaty, and a popular referendum was to have been held on this issue during 1940. This program was interrupted by the German occupation of Denmark on Apr. 9, 1940. On April 10 the Althing authorized the Government temporarily to exercise the sovereign powers vested in King Christian X and to assume full charge of Iceland's foreign affairs, previously conducted by Denmark under the Act of Union. On May 10, 1940, British troops occupied Iceland "to insure the security of Iceland against a German invasion." The British Government gave a written pledge to withdraw from the island upon the conclusion of hostilities and to avoid interference with the existing administration (see YEAR BOOK for 1940, p. 344). For 1941 developments, see *History*.

HISTORY

Iceland and the War. Iceland was drawn closer to the vortex of the spreading World War during 1941. On February 9 German long-range warplanes, flying presumably from Norway, circled over Reykjavik and machine-gunned the British-held airport nearby. There were repeated German air attacks upon shipping in Icelandic waters, particularly after the Reich Government on March 25 extended its anti-British blockade zone over all the waters surrounding Iceland and westward to within three miles of the Greenland coast. The Germans claimed that Reykjavik was being used as a transshipment point for United States munitions and other cargoes consigned to Great Britain.

During April the Iceland Government reportedly obtained licenses to purchase \$1,568,287 worth of military and commercial airplanes and munitions in the United States. (For many years previously, Iceland had remained completely defenseless.) During May the British reported large concentrations of German troops, transport planes, and ships in Northern Norway and an attempted invasion of Iceland was believed imminent. About the same time a group of United States army officers visited Iceland.

Independence Declared. On May 16 the Althing took steps to cancel Iceland's personal union with Denmark. It adopted four constitutional amendments, three of them unanimously and the other by a vote of 38 to 3. The first proclaimed Iceland's right to declare itself independent because Denmark was unable to exercise its governmental functions in accordance with the Act of Union of 1918. The second incorporated Iceland's decision not to prolong the Act of Union upon its expiration in 1943. The third provided for the election of a

regent to exercise the King's functions, which had been temporarily assumed by the Althing on Apr. 10, 1940. The fourth provided for the establishment of a constitutional republic as soon as union with Denmark was formally terminated.

Early in June the Danish Government was formally notified of Iceland's decision to end the union. However assurances were given, according to Danish officials, that action on the matter would be postponed until the end of the war, when negotiations could be undertaken. The Althing's action was interpreted as a move to dissociate Iceland from any connection with a German-controlled "new order" in Europe, to which Denmark might be forced to adhere. See DENMARK under *History*.

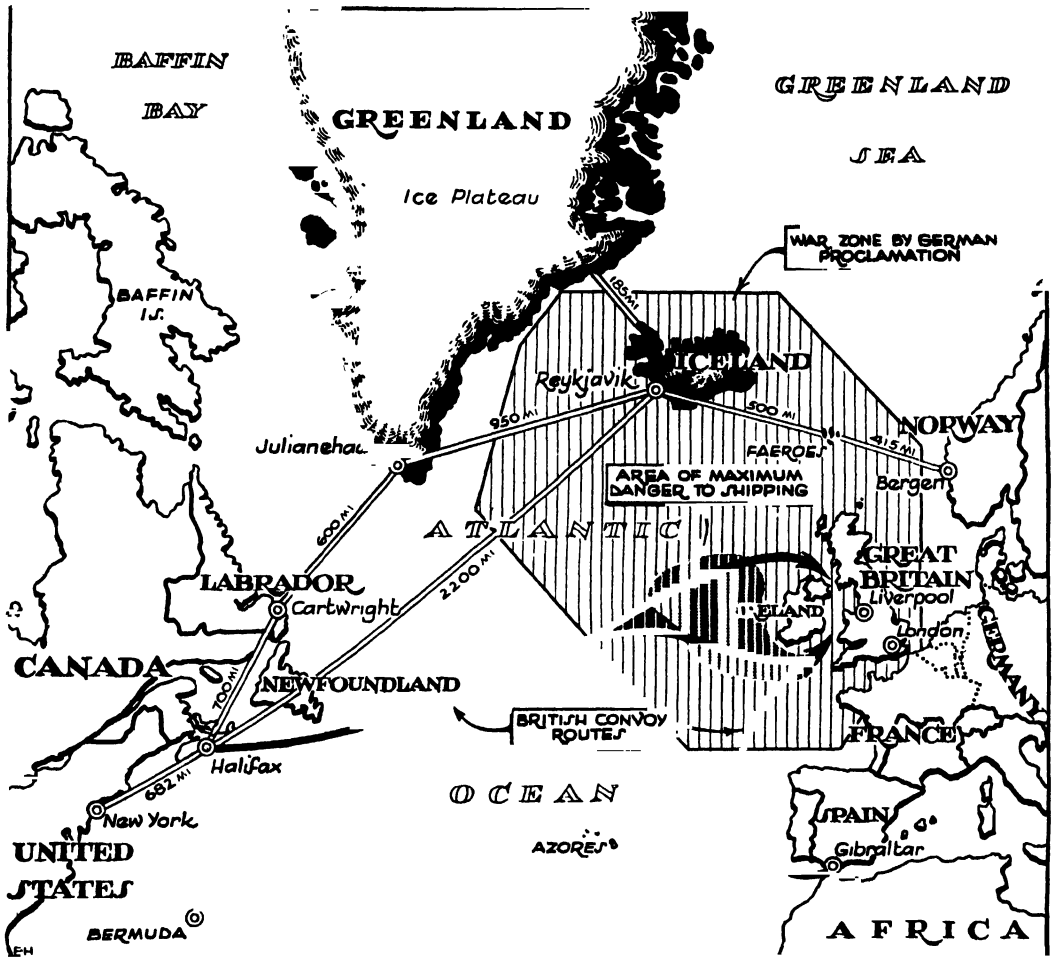
Sveinn Björnsson, Iceland's former Ambassador to Denmark, was elected regent on June 17. In his acceptance speech, he stated that Iceland was still endeavoring to be neutral in the European struggle, although the British occupation and the German sea blockade and attacks on Icelandic citizens had "practically dragged us into the war against our will." Shortly afterwards the British Government revealed that the Government of Iceland had protested against the deportation of a Communist member of the Althing and the banning of a Communist daily paper by British occupation authorities. Relations between the British occupationary forces and the Icelandic people remained friendly, according to reports from the island.

U.S. Protection Accepted. On July 7 President Roosevelt announced to the Congress in Washington that in accordance with an agreement reached between him and the Premier of Iceland on July 1, U.S. naval forces "have today arrived in Iceland in order to supplement, and eventually to replace, the British forces which have until now been stationed in Iceland in order to insure the adequate defense of that country."

The background of this unexpected development was revealed in the correspondence between President Roosevelt and Premier Jónasson of Iceland, appended to the President's message to Congress. On July 1 Premier Jónasson informed Mr. Roosevelt that the British Minister to Iceland on June 24 had told him the British forces there were required elsewhere. According to the Premier's message, the Minister stated that President Roosevelt was prepared to send troops to Iceland "to supplement and eventually to replace the British force" but was unwilling to do so without an invitation from the Iceland Government. The Premier's message continued:

After careful consideration of all circumstances the Iceland Government, in view of the present state of affairs, admit that this measure is in accordance with the interest of Iceland, and therefore are ready to entrust the protection of Iceland to United States on the following conditions:

1. United States promise to withdraw all their military forces, land, air and sea from Iceland immediately on conclusion of present war.
2. United States further promise to recognize the absolute independence and sovereignty of Iceland and to exercise their best efforts with those Powers which will negotiate the peace treaty at the conclusion of the present war in order that such treaty shall likewise recognize the absolute independence and sovereignty of Iceland.
3. United States promise not to interfere with Government of Iceland neither while their armed forces remain in this country nor afterward.
4. United States promise to organize the defense of the country in such a way as to insure the greatest possible safety for the inhabitants themselves, and to assure that they suffer minimum disturbance from military activities, these activities being carried out in consultation with Iceland authorities as far as possible. Also because of small population of Iceland and consequent danger to nation from presence of a numerous army, great care must be taken that only picked troops are sent here. Military authorities should be also instructed to keep in mind that Icelanders have been unarmed for centuries and are en-



Courtesy of The New York Times

THE CRUCIAL NORTH ATLANTIC BATTLEGROUND

tirely unaccustomed to military discipline, and conduct of troops toward the inhabitants of the country should be ordered accordingly.

5. United States undertake defense of the country without expense to Iceland and promise compensation for all damage occasioned to the inhabitants by their military activities

6. United States promise to further interests of Iceland in every way in their power, including that of supplying the country with sufficient necessities, of securing necessary shipping to and from the country and of making in other respects favorable commercial and trade agreements with it

7. Iceland Government expects that declaration made by President in this connection will be in agreement with these promises on part of Iceland, and Government would much appreciate its being given the opportunity of being cognizant with word of this declaration before it is published.

8. On part of Iceland, it is considered obvious that if United States undertake defense of the country it must be strong enough to meet every eventuality and particularly in the beginning it is expected that as far as possible effort will be made to prevent any special danger in connection with change-over. Iceland Government lays special stress on there being sufficient airplanes for defensive purposes wherever they are required and they can be used as soon as decision is made for United States to undertake the defense of the country.

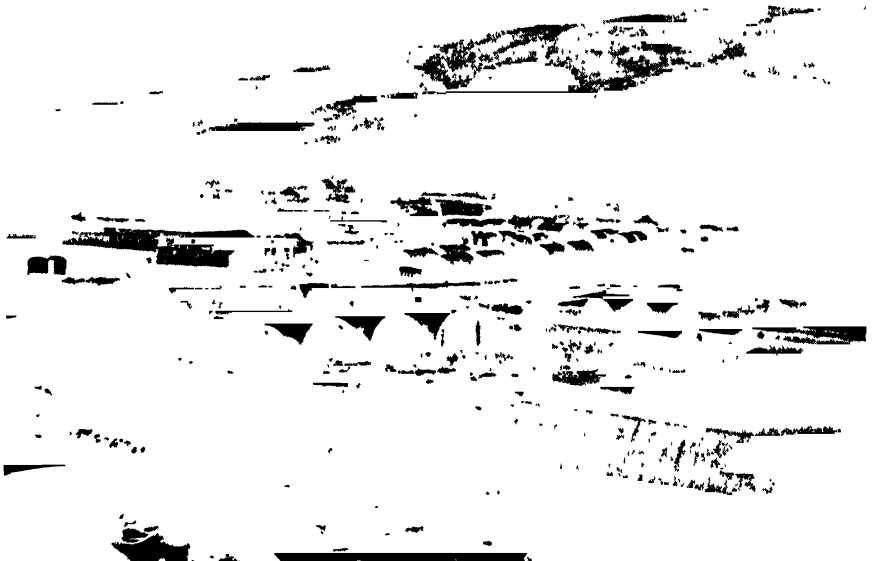
This decision is made on the part of Iceland as an absolutely free and sovereign state and it is considered as a matter of course that the United States will from the beginning recognize this legal status of the country, both states immediately exchanging diplomatic representatives.

On the same date (July 1), President Roosevelt replied that the conditions set for by Premier

Jónasson were "fully acceptable to the Government of the United States and . . . will be observed in the relations between the United States and Iceland." He added that the agreement of the U.S. Congress would be asked to permit the exchange of diplomatic representatives. Stating that troops would be sent immediately, the President's reply continued:

The steps so taken by the Government of the United States are taken in full recognition of the sovereignty and independence of Iceland and with the clear understanding that American military or naval forces sent to Iceland will in no wise interfere in the slightest degree with the internal and domestic affairs of the Icelandic people; and with the further understanding that immediately upon the termination of the present international emergency, all such military and naval forces will be at once withdrawn, leaving the people of Iceland and their Government in full sovereign control of their own territory.

Following the landing of the American forces on July 7, Premier Jónasson in a radio broadcast to the nation read the texts of these messages and announced that more detailed explanations would be given at an extraordinary session of the Althing. The Althing met on July 10 and by a vote of 39 to 3 approved the "agreement between the Government and the President of the United States for American military protection of Iceland while the present war lasts."



Wide World

View of a U.S. Marine Corps Camp in Iceland, showing "Nissen Huts"



Joint defenders of Iceland - American soldiers explaining the fine points of the Garand rifle to a Scottish member of the British garrison

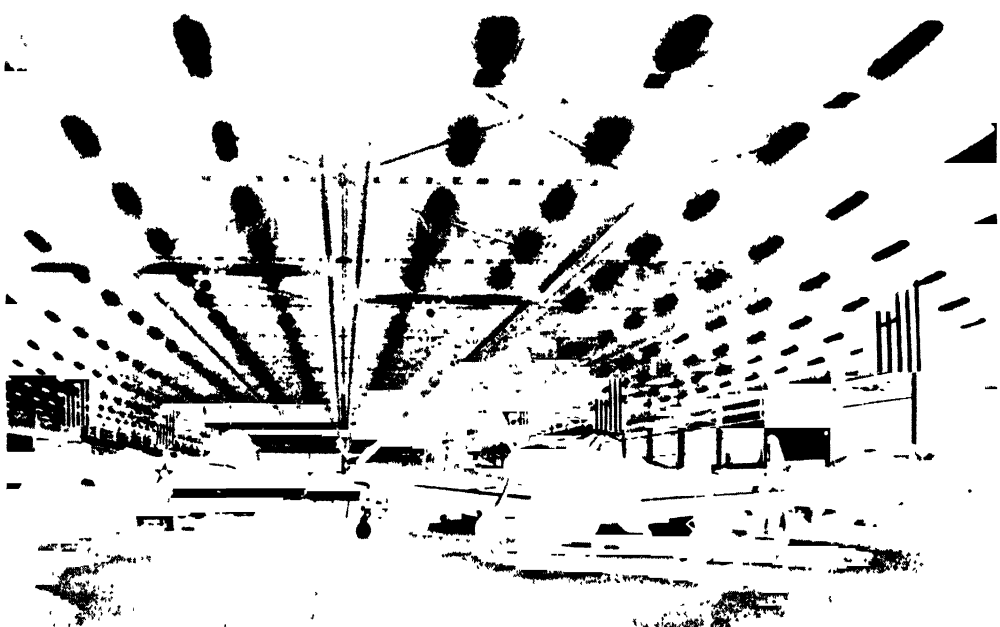
International News Photo



Official U.S. Navy Photo from I N P

UNITED STATES NAVAL VESSELS IN THE HARBOR OF REYKJAVIK

Seen through barbed-wire entanglements, as United States forces landed in Iceland to assist the British garrison in safeguarding the north Atlantic sea lanes.



Photos from Westinghouse (above) and Bell Aircraft Corporation

MODERN FLUORESCENT LIGHTING EXTENDS "DAYLIGHT" AROUND THE CLOCK

Above: Gleareless, shadowless illumination is achieved in a modern San Francisco office building by parallel continuous strips of Westinghouse type 2-CL-40 fluorescent luminaires and extensions. Below: War production 24 hours a day is facilitated by 720 two-lamp RF units See *ILLUMINATION*

British Evacuation Delayed. Premier Jónasson told parliament that Britain had promised to remove all military forces from the island as soon as the United States could land enough men to offer adequate protection. On the previous day Prime Minister Churchill announced in the House of Commons that Britain proposed to keep armed forces in Iceland to cooperate with American forces "in resistance to any attempt by Hitler to gain a footing."

Subsequent developments failed to clear up these seemingly contradictory statements. The British Foreign Minister, Anthony Eden, told the House of Commons on July 16 that all British forces eventually would be withdrawn from Iceland, leaving the island to be guarded by U.S. forces. The Consul General of Iceland in New York on July 22 stated that under the agreement made by the Icelandic and British Governments, "the American forces are in Iceland to replace the British forces which will be withdrawn entirely from Iceland as soon as circumstances allow." However Prime Minister Churchill, stopping at Reykjavik in mid-August following his conference with President Roosevelt off Newfoundland, told a street crowd that Britain and America would jointly defend Iceland and assure it of independence after the war. Despite the arrival of a field force of the U.S. Army in Iceland in mid-September, British forces were still there at the year's end.

Relations with United States. On August 14 Icelandic authorities announced an agreement under which the American Government undertook the large-scale improvement and extension of Iceland's harbor facilities, using American materials and Icelandic labor. Secretary of the Navy Frank Knox announced November 8 the establishment of a U.S. Naval operations Base in Iceland (presumably at Reykjavik) under the commander in chief of the U.S. Atlantic Fleet.

A special Icelandic delegation arrived in Washington August 24 and opened negotiations with the U.S. Government on trade, finance, shipping, and related economic issues. On November 21 the U.S. Government signed a lend-lease agreement with Iceland through which Washington undertook to pay dollars for fish and fish oil exported from Iceland to Britain. The cash advanced to Iceland, estimated at \$20,000,000 annually, was to be charged off to the British under the lend-lease program. The Iceland Government used the dollar exchange placed at its disposal for the purchase in the United States of cereals, machinery, coal, etc., which the British Government had previously undertaken to supply to Iceland. The British-Icelandic trade accord was annulled. On the same day this agreement was signed, President Roosevelt accepted the credentials of Iceland's first Minister to the United States. The intention of the U.S. Government to negotiate a reciprocal trade agreement with Iceland was announced by Secretary of State Hull November 17.

Internal Problems. The influx of British and American troops, the shipping shortage, and the transfer of labor from the farms to work on harbor projects, roads, and fortifications produced a 67 per cent rise in living costs between Jan. 1, and Oct. 22, 1941. This and other "unsettled difficulties" led the coalition government headed by Premier Hermann Jónasson to hand in its resignation on October 22. The Regent, however, postponed acceptance of the resignation "until it is seen how Parliament will handle the problems of rising living costs." Premier Jónasson and his Cabinet resigned for the second time on November 7 when Parliament rejected a bill to limit living costs, introduced by his Progress-

sive party. The Regent this time accepted the resignation, but asked the Government to remain in office until a new government was formed.

See LEND-LEASE ADMINISTRATION; MILITARY PROGRESS; UNITED STATES under *Foreign Affairs*; WORLD WAR.

IDAHO. A mountain State. Area: 83,557 sq. mi., including 749 sq. mi. of inland water. Population: (1940 census) 524,873. The urban population comprises 33.7 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 1.0 per cent (U.S. average, 10.2); elderly (65 years and over), 6.0 per cent. Idaho ranks 12th among the States in area, 42nd in population, and 43rd in density, with an average of 63 persons per square mile. The largest city and capital is Boise with 26,130 inhabitants. There are 44 counties and 7 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education, there were 121,411 pupils enrolled in the State School System of Idaho during the school year 1937-38. Of this total, 88,563 were enrolled in kindergartens and elementary schools and 32,898 in secondary schools. The instructional staff comprised 4,471 persons, who received an annual average salary of \$1,087 (U.S. average: \$1,374); 1,413 or 32.9 per cent were men. Expenditures for all public schools in 1937-38 were \$10,047,019, making a total cost per capita of \$20.01 (U.S. average: \$17.15). There were 1,295 school buildings in the State, of which 638 were one-room, one-teacher schools. The value of public property used for school purposes was \$26,599,115. For higher education, see under *Idaho* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 4,872, of which 4,011 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 167,066; 129,454 were private and commercial automobiles, 128 busses, and 33,758 trucks and tractor trucks. Gross motor-fuel consumption was 107,644,000 gallons. Net motor-fuel tax receipts were \$4,825,000, the rate being five and one-tenth cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$2,768,000.

Railways of all classes extended 2,836 miles (Dec. 31, 1939) 1.21 per cent of the total mileage in the United States. Class I steam railways (2,679 miles) reported 5,280,219 tons of revenue freight originating in Idaho in 1940 and 3,317,789 tons terminating in Idaho. There are 46 airports and landing fields in the State (12 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 103 civil aircraft in the State and 727 commercial and private pilots (665 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 2,935,000, as compared with 2,909,000 acres in 1940. According to the latest census, there are 43,663 farms, valued at \$339,194,391, averaging 235.8 acres each. Farm population numbered 203,616 or 38.8 per cent of the total. Leading crops with production were: Wheat, \$23,649,000, 27,822,000 bu.; hay, \$20,191,000, 2,391,000 tons; potatoes, \$14,274,000, 27,450,000 bu.; dry beans, \$6,013,000, 1,888,000 bags; barley, \$5,814,000, 11,400,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 549 manufacturing es-

tablishments in Idaho, employing 10,877 wage earners who received \$12,754,127 in wages for the year. The total value of products was \$90,475,147; value added by manufacture, \$31,770,204.

Mineral Production. Leading mineral products are: Silver, of which 16,605,000 fine oz. valued at \$11,808,000 were produced in 1941, according to preliminary figures of the U.S. Bureau of Mines; zinc, 155,200,000 lb., \$11,795,200; lead, 207,000,000 lb., \$11,592,000; gold, 150,000 fine oz., \$5,250,000. Production of zinc increased about 10 per cent as compared with the previous year, but silver production declined by 5 per cent. Total value of mineral production in 1939 was \$33,138,635 or 78 per cent of the total for the United States. See GEOLOGICAL SURVEY; TUNGSTEN.

Trade. According to the 1940 census there were 989 wholesale establishments in Idaho, employing 4,695 persons, reporting net sales for 1939 of \$105,510,000 and annual pay roll of \$5,282,000. There were 6,804 retail stores with 16,549 employees, reporting sales of \$175,873,000 and pay roll of \$16,189,000. Service establishments numbered 2,140, employing 2,397 persons for \$2,038,000 per year, and reporting a business volume amounting to \$8,630,000. The leading business center of the State is Boise which reported wholesale sales of \$16,878,000 and retail sales of \$22,103,000. Ada County, including the city of Boise, is the leading county in the State in the volume of receipts for its service establishments (\$1,541,000).

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Idaho was \$11,466,000. Under the Social Security program, financed by Federal funds matching State grants, 9,318 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$22.76 (U.S. average pension, \$21.08); 7,666 dependent children in 3,048 families received average monthly payments of \$30.10 per family (U.S. average, \$32.73); and 278 blind persons received \$22.48 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 1,410 and received \$13.81 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 670 (\$44,000); NYA student work program, 1,650 (\$14,000); NYA out-of-school work program, 1,345 (\$33,000); WPA, 6,444 (\$382,000); other Federal emergency projects, 30 (\$3,000); regular Federal construction projects, 1,232 (\$132,000). The Farm Security Administration certified subsistence payments totaling \$14,000 for the month to 445 cases.

Legislation. The Legislature convenes in regular session on the first Monday after January first in odd years. It is composed of 44 Senators (23 Democrats and 21 Republicans in 1941) and 64 Representatives (38 Democrats and 26 Republicans). The following summary of 1941 legislation is reprinted from the Boise (Idaho) *Capital News*:

Few changes were made in Idaho's governmental structure as scores of new laws were placed on the statute books after the Idaho legislature adjourned its 26th session. On the financial side, the record of the 26th legislative session was good—the ad valorem tax levy was reduced despite increased appropriations for State governmental functions and only one new tax measure was enacted. It was the bill increasing State tax on liquor 20 per cent and its passage provided revenue for balancing of the 1941-42 budget for State departments. It was expected to raise more than \$1,000,000 during the next two years and retire outstanding warrants left by the last administration. On the strictly governmental side, the house and

senate passed legislation which will lead to reform of the State's fiscal and penal systems. Appropriation measures tied up the final days of the session, but when the smoke had cleared the total was \$18,274,485—about \$2,123,000 less than the amount of appropriations which had been approved by the Governor.

Gov. Chase A. Clark did not obtain extra money for relief during the session, but he obtained control of the State liquor dispensary, State insurance fund, and taxing agencies. His "pet bills" constituted only a portion of the laws which were enacted during the session from a maze of legislation.

Three companion senate joint resolutions provided the Idaho electorate with three constitutional amendments to be voted on in November, 1942. If the voters approve, the result will be complete remodelling of Idaho's penal system. Jointly, the bills call for amendment of the constitution to abolish the present State Board of Prison Commissioners and permit the State legislature to establish a non-partisan board to be known as the Board of Correction. The three-man board, appointed by the Governor, would have complete authority over prison operations. At best the change can not go into effect until 1943. A fourth constitutional amendment was contained in a resolution to permit sale of State-owned land at the rate of \$5 per acre.

Some of the most important governmental changes enacted into law concerned State bookkeeping and fiscal procedures. Governor Clark signed a series of bills, sponsored by State Auditor Calvin E. Wright, which will start the fiscal year on July 1, instead of January 1. This was regarded as important because it puts the State in line with the federal government, and simplifies the process of appropriating funds for State departments. Under the old fiscal year system, the legislature had to make emergency appropriations to carry the departments through the 60 days of the session, or until regular allocations were made.

Also approved was a \$50,000 fund to conduct a State inventory and set up a "general ledger." The latter will provide the State with a day to day check on expenditures and income—helping to prevent over-spending. To supplement the general ledger, laws were passed to make it compulsory for State department heads to prepare requests for funds needed to carry them through quarterly periods. By making it necessary to ask for funds in advance, the legislature hoped to prevent over-drawing of appropriations. Under new laws, each appropriation must be "tagged" for a specific use. This was done to prevent use of certain funds for purposes which the legislature did not intend. The auditor must also issue quarterly reports on expenditures and disbursements. All appropriations must be spent by June 30 of the year following the next session of the legislature, preventing carry over of unexpended funds.

Changes were made in income tax laws to require federal and State employees to file State tax returns, eliminating federal income taxes as a deductible item from State income taxes, and repealing the 1939 law which permitted gasoline dealers to deduct their license taxes from income computations.

Governor Clark's program of abolishing State commissions was adhered to, and by the end of the session the State tax commission, liquor commission, insurance compensation commission, and noxious weed commission had been abolished. In the case of the noxious weed commission, its duties were transferred to the Department of Agriculture, but the other boards were replaced by single superintendents appointed by the Governor.

Scores of minor bills were enacted, some enabling counties and cities to perform functions heretofore prohibited, some changing court procedures, others relating to dozens of various governmental functions. Court procedures were revised in several minor instances, and the maximum penalty for rape was changed to permit discretion of the judge. The minimum sentence for rape was reduced from five years to one year imprisonment.

Although several attempts were made to change Idaho's election system, only one revision will be made in the ballot. It provides that names of presidential and vice-presidential candidates be placed on the ballot along with names of electors grouped by parties.

Henceforth, Idaho potatoes will appear on the market under new grading designations. The new grades are Idaho deluxe, Idaho standard, and Idaho utility. The designations were based on weight, size, and condition of the product.

Finances. Total tax collections in Idaho for the fiscal year ending in June, 1941, were \$14,915,000 (1940: \$14,053,000). Total sales taxes amounted to \$5,574,000, including motor fuel, \$5,356,000. Taxes on specific businesses ran to \$1,538,000, general and selective property, \$2,613,000, unemployment compensation, \$2,058,000. The net income taxes were \$2,156,000. Cost payments for the operation of general government totaled \$15,486,000 in 1939, the latest year available. (Revenues for the

general government for that year were \$17,760,-000.) Cost of operation per capita was \$29.84. Total gross debt outstanding in 1941 was \$1,986,000, as compared with \$7,525,000 in 1932. See above under *Legislation*.

Officers and Judiciary. The Governor is Chase A. Clark (Dem.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, Charles C. Gossett; Secretary of State, George H. Curtis; Attorney General, Bert. H. Miller; State Treasurer, Myrtle P. Enking; State Auditor, Calvin E. Wright. Chief Justice of the Idaho Supreme Court is Alfred Budge; there are five justices elected by popular vote for six-year terms.

ILLINOIS. An east north central State. Area: 56,400 sq. mi., including 453 sq. mi. of inland water, but excluding part of Lake Michigan, 1,526 sq. mi. Population: (1940 census) 7,897,241. The urban population comprises 73.6 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 5.0 per cent (U.S. average, 10.2); elderly (65 years and over) 7.2 per cent. Illinois ranks 23rd among the States in area, third in population, and ninth in density, with an average of 141.2 persons per square mile. The capital is Springfield with 75,503 inhabitants; largest city, Chicago, 3,396,808. There are 102 counties and 59 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to John A. Wieland, Superintendent of the Department of Public Instruction, there were 1,287,085 pupils enrolled in the public schools of Illinois for the school year ended June 30, 1940, 907,922 in elementary schools and 379,163 in secondary schools. Teachers numbered 49,132 and received an annual average salary of \$1,714.23. Total expenditures for the year \$126,697,905.37. For higher education, see *Illinois* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 11,566, of which 11,503 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 1,941,206; 1,706,639 were private and commercial automobiles, and 219,175 trucks and tractor trucks. Gross motor-fuel consumption was 1,540,441,000 gallons. Net motor-fuel tax receipts were \$41,824,000, the rate being three cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$24,760,000.

Railways of all classes extended 11,981 miles (Dec. 31, 1939) 5.10 per cent of the total mileage in the United States. Class I steam railways (9,713 miles) reported 77,711,313 tons of revenue freight originating in Illinois in 1940 and 78,745,721 tons terminating in Illinois. There are 70 airports and landing fields in the State (23 lighted fields) and one seaplane base and six seaplane anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 1,230 civil aircraft in the State and 3,838 airline transport, commercial, and private pilots (3,038 private). See *ROADS AND STREETS; WATERWAYS, INLAND*.

Agriculture. Gross value of farm crops produced in 1941 totaled \$497,762,000, an increase of 43 per cent over 1940, and the highest since 1924. Corn rose to \$276,940,000 or 56 per cent of the total value of principal crops for the year. Acreage harvested in principal crops came to 18,617,000, as compared with 18,319,000 acres in 1940. According to the latest census, there are 213,439

farms, valued at \$2,537,117,306, averaging 145.4 acres each. Farm population numbered 976,964 or 12.4 per cent of the total. Leading crops with production were: Corn, \$276,940,000, 401,362,000 bu.; soybeans, \$73,692,000, 49,128,000 bu.; wheat, \$36,586,000, 35,520,000 bu.; oats, \$58,563,000, 154,112,000 bu.; commercial truck crops, \$5,527,-000.

Manufacturing. According to the latest census (covering the year 1939) the total value of manufactured products was \$4,794,860,733. For details, see 1940 YEAR BOOK.

Mineral Production. Leading mineral products in 1940 were (with 1939 figures in parentheses): Petroleum, 146,788,000 bbl. (94,912,000 bbl. valued at \$101,200,000), coal, 49,495,000 net tons (46,450,000 net tons, \$76,178,000); pig iron shipped from furnaces, 4,093,623 net tons valued at \$73,882,065 (3,203,846 net tons, \$57,718,814); coke, 3,014,840 net tons (1,884,240 net tons, \$11,-963,932); stone, 9,209,170 short tons, \$7,556,497 (8,420,120 short tons, \$7,820,589); cement, 4,937,-127 bbl., \$7,209,431 (4,801,292 bbl., \$7,056,746); sand and gravel, 10,103,214 short tons valued at \$5,578,309 (8,755,193 short tons, \$4,686,487). Clay products (other than pottery and refractories) were valued at \$7,107,144 in 1939. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$210,295,738 or 4.97 per cent of the total United States production. (Duplications are eliminated in State totals; e.g. pig iron and coke are omitted.) Illinois ranks sixth among the States in value of minerals produced.

Trade. According to the 1940 census there were 14,498 wholesale establishments in Illinois, employing 122,741 persons, reporting net sales for 1939 of \$4,998,766,000 and annual pay roll of \$228,407,000. There were 109,132 retail stores with 332,003 employees, reporting sales of \$2,857,-646,000 and pay roll of \$339,072,000. Service establishments numbered 42,697, employing 84,810 persons for \$98,074,000 per year, and reporting a business volume amounting to \$294,956,000. The leading business center of the State is Chicago which reported wholesale sales of \$4,080,415,000, retail sales of \$1,514,829,000, and \$212,532,000 receipts for its service establishments. Peoria reported sales of \$83,323,000 wholesale and \$61,-146,000 retail; Springfield, \$29,637,000 and \$41,-040 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Illinois was \$212,964,000. Under the Social Security program, financed by Federal funds matching State grants, 146,636 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$23.17 (U.S. average pension, \$21.08); 16,526 dependent children in 7,409 families received (without Federal aid) a total payment of \$172,535; and 7,410 blind persons received (without Federal aid) a total payment of \$223,427. General relief cases, which are supported by State and local funds only, numbered 113,900 and received \$21.55 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 6,754 (\$447,-000); NYA student work program, 25,762 (\$225,-000); NYA out-of-school work program, 24,104 (\$511,000); WPA, 95,519 (\$5,649,000); other Federal emergency projects, 1,463 (\$184,000); regular Federal construction projects, 25,376 (\$5,574,000). The Farm Security Administration certified sub-

sistence payments totaling \$14,000 for the month to 653 cases.

Legislation. The General Assembly convenes in regular session on Wednesday after the first Monday of January in odd years. It is composed of 51 Senators (23 Democrats and 28 Republicans in 1941) and 153 Representatives (73 Democrats, 79 Republicans, and one vacancy). The 62d General Assembly convened Jan. 8, 1941, and adjourned sine die on June 30. In addition, a special session convened on December 18 and was still in session at the end of the year. Appropriations of the regular 1941 session were the highest in history, exceeding \$510,000,000. The reduction of the sales tax from 3 to 2 per cent, effective July 1, caused loss of \$65,000,000 in anticipated revenue, and an unusual number of new taxes were accordingly imposed. They included a one-mill tax on cigarettes, doubling of the tax on liquor and beer and a substantial increase in the tax on wine, and imposition of a 3 per cent tax on oil production. A summary of other important enactments follows, as condensed from the *Chicago Tribune*, June 29, 1941:

Banks. H B 432 prescribes that double liability of bank stockholder shall be limited to one year

Cities, Villages, etc. S. B. 10 revises cities and villages act S B 505 authorizes tax increase for Chicago Public library from 1.2 mills but not to exceed 2 mills H B 165 authorizes creation of medical center in Chicago H B 537 authorizes cities to operate parking lots H B 663, 664, and 665 provide for permanent registration in downstate area

Civil Service S B. 268 to 271 and 359 requires applicants for civil service examinations to pay fees

Counties S B. 61 authorizes counties to operate and maintain airports. S. B. 115 and 116 increases sheriff's fees and authorizes county boards to purchase and maintain police radio systems H B 161 provides for election of county auditors in all counties under township organization having population between 75,000 and 300,000

Courts. S. B. 470 liberalizes provisions for judicial pensions S. B. 565 authorizes women to serve on grand juries H. B. 241 prohibits demands in garnishment upon employe or employer before judgment is obtained

Crime, Parole, etc. H. B. 103 revises parole act Authorizes judges in criminal cases to make minimum and maximum advisory recommendations within limits of indeterminate sentence act. H. B. 411 creates new state department of public safety

Elections. H. B. 501 and 502 makes all general election days holidays. H. B. 552, 553, and 554 provide for punishment of giver of election bribe as well as recipient, increase penalties

Fireworks. H. B. 70 prohibits sale or use of explosive fireworks except at supervised displays

Horse Racing. S. B. 68 abolishes Illinois Racing commission and creates Illinois Racing board. Increases take from tracks from 7½ per cent to 10 per cent of money wagered

Labor and Welfare. S. B. 682 and 683 increases work man's compensation 10 per cent for disability from occupational disease. S. B. 691 extends workmen's compensation act in 1942 to cover establishments employing one or more positions. H. B. 850 requires payment of the prevailing rate of wage on state work H. B. 46 eliminates insurance policies, \$500 or less from applications for relief H. B. 899 to 401 bring Illinois under federal aid to dependent children [ADC] plan. H. B. 681 and 918 revises the law relative to mentally ill persons; permits voluntary self-commitment to institutions. H. B. 837 renames the Illinois Emergency Relief commission as the Illinois Public Aid commission

Motor Vehicles and Roads. H. B. 221 increases from 25 to 50 cents drivers' license or drivers' permit for operators under 18 years old. H. B. 429 requires instructions in highway safety and traffic regulations in all educational institutions supported wholly or partly by state funds H. B. 758 repeals section of traffic code under which courts have convicted motorists for certain serious driving offenses without suspending driver's license H B 761 and 764 licenses and regulates new and used car dealers Reduces fee for duplicate dealer's auto plates from \$10 to \$3. H. B. 763 reduces to 50 cents chauffeurs' license now \$5 with \$3 renewal fee. H. B. 765 increases from \$200 to \$300 bond requirement for truckers paying ton-mile tax H. B. 766 adds hit and run to traffic offenses revoking driver's license. H. B. 794 increases from 35 to 40 feet legal maximum length of tractor and semitrailer combination S. B. 141 to curb cheating, bars ownership of both chauffeur's license and driver's license

National Preparedness S. B. 154 authorizes creation of state council of defense. H. B. 11 to 14, 16 to 22, 24, 25 prohibits aliens from obtaining professional licenses to

practice in Illinois. [Vetoed] H. B. 129 preserves civil service pension rights of employes of municipal corporations who enter army or navy service H. B. 297, 298, and 299 bars communists, Nazis, and other un-American organizations from the election ballot H. B. 800 prohibits paying of salaries or expenses to state employes who advocate un-American principles S B 178 preserves civil service rights for state employes entering military or naval service. H B 198 requires employers to rehire former employes returning from military or naval service.

Miscellaneous S. B. 520 and 521 authorizes creation of Illinois State Public Building authority to buy buildings for state offices and exempt them from taxation. S. B. 710 creates commission to investigate strip mining in Illinois. H. B. 87 directs legislative reference bureau to draft revision of Illinois statutes H B 149 fixes one day minimum requirement for applications to wed H B 279 regulates practice of professional engineering. H B 329 prohibits employer from selling to his employes any merchandise he does not produce or handle H B 331 and 832 make Lincoln's birthday, Feb. 12, a school and legal holiday, and if it falls on Sunday makes following Monday a legal holiday H B 622 designates June 14 as Flag day H B 930 requires at least two officers of a corporation operating a drug store to be registered pharmacists S B 694 provides for conservation of oil, gas, and coal resources by department of mines H B 131 ratifies interstate oil and gas compact. See LABOR LEGISLATION

Finances. Total tax collections in Illinois for the fiscal year ending in June, 1941, were \$280,872,000 (1940: \$270,148,000). Total sales taxes amounted to \$156,205,000, including general sales, \$101,761,000, motor fuel, \$43,302,000. Taxes on specific businesses ran to \$21,597,000, general and selective property, \$513,000, unemployment compensation, \$70,625,000 Cost payments for the operation of general government totaled \$165,883,000 in 1939, the latest year available. (Revenues for the general government for that year were \$275,406,000) Cost of operation per capita was \$21.11 Total gross debt outstanding in 1941 was \$160,783,000, as compared with \$222,737,000 in 1932.

Officers and Judiciary. The Governor is Dwight H. Green (Rep.), inaugurated in January, 1941, for a four-year term; Lieutenant Governor, Hugh W. Cross; Secretary of State, Edward J. Hughes, Attorney General, George F. Barrett, State Treasurer, Warren Wright; State Auditor, Arthur C. Lueder Chief Justice of the Illinois Supreme Court is Walter T. Gunn; there are six associate members elected by popular vote for nine-year terms.

See PRISONS; topics listed under CHICAGO.

ILLITERACY. See the countries under *Education*.

ILLUMINATION. Fluorescent lighting, four-year-old infant in the field of illumination, continues in pre-eminence. Introduced in 1938, fluorescent lamps were produced and used in that year to the extent of only some 200,000. This figure has grown—in 1939 to 1,600,000; 1940, 7,000,000; 1941, 22,000,000 This prodigious growth in manufacture no more than kept pace with the expanding demand for fluorescent lighting, principally for industrial and commercial installations Hundreds of industrial plants, backbone of the nation's rapidly expanding war effort, have installed lighting equipment providing illumination intensities of 50 foot-candles or more, and 85 per cent of these are fluorescent. The first plant to be designed for and devoted exclusively to the manufacture of fluorescent lamps was built and placed in operation during 1941 near Fairmont, W. Va., with an initial capacity of 50,000 lamps per day and an ultimate of 200,000. This five-acre windowless blackout plant makes full use of its own products including more than 5,000 40-watt fluorescent lamps to produce 40 foot-candles of illumination at the working plane; also germicidal lamps to irradiate the conditioned air that is distributed throughout the plant.

Fixtures, commercial and industrial, for the use of fluorescent lamps were notably improved in quality and appearance in 1941, and extended in range of types available. By the end of the year 10 different sizes of these lamps had become available, ranging from 9 to 60 inches in length and from 6 to 100 watts. In color range, all of these were available in 3,500° white and in daylight; most of them also in red, pink, gold, green, blue, and "soft" white.

Incandescent lamps also set a new record with a total output of 1,328,000,000 lamps—718,000,000 large and 610,000,000 small lamps including flashlight, automobile, and other such lamps. This is a third more than were reported for 1940, when the billion mark was reached for the first time. In 1931 the reported total was 570,000,000. Comparison of these totals gives a good rough measure of the increased use of electric energy for illumination.

Germicidal lamps, something of a byproduct of fluorescent-lamp development, are finding ever-widening and apparently successful use in controlling the growth of various molds and fungi involved in various manufacturing processes, and also in controlling the air-borne bacteria which spread respiratory diseases. With better food and health now matters of especially vital national concern, significant additions to the line of available sunlamps are of interest. One of these for 1941 is the common S-4 lamp element placed in a reflector-type globe to multiply its effectiveness. Another is a 275-watt self-contained unit small enough to be carried in a woman's handbag. This latter is a reflector-type lamp utilizing the high-intensity capillary mercury-arc lamp which made its debut in some of the powerful searchlights at the New York World's Fair in 1939.

A new photoflash lamp about the size of a walnut reaches its peak output of light in 0.005 second and completes its flash in 0.015 second, a characteristic very useful in open-lens flash photography. Another new flashbulb is designed to give the sustained flash required for use with focal-plane shutters. A "blackout flashbulb" giving off invisible infra-red radiations has been used for photography during blackouts in England and has been announced for early availability in the United States. Film sensitive to infra-red is required for use with this lamp.

The sealed lamp-and-reflector type of units developed for passenger automobiles in 1940 has been adapted to trucks, busses, and transports, and is being adapted to various military uses.

Highway and street lighting is given importance by statistics which show that some 50 per cent of all motor-vehicle accidents and 60 per cent of all traffic fatalities occur during night hours in spite of the greatly reduced volume of traffic during those hours. Thirty or more of the larger cities and towns of the United States, and many smaller ones, initiated or continued programs of street-lighting improvement during 1941—for added safety and to increase the effective use of streets and highways as a defense measure. For blackout protection, rapid progress has been made in the development of low-intensity glow-lamps and also ultra-violet lamps for use in conjunction with fluorescent paints and other materials for roadway markers that will accommodate slow-moving traffic under emergency conditions. Longest continuous lighted highway in the world is the new Queen Elizabeth Way, now completed from Toronto to Niagara Falls, Canada, (70 miles) and to be extended another 21 miles to the Canadian entrance to the Peace Bridge connecting with Buffalo, N.Y. Standard installation on

this highway are 6,000-lumen fixtures 200 feet apart and 26 feet above the pavement, supplemented by sodium luminaires at intersections and other danger points.

In terms of dollars and cents, a report presented to the Illuminating Engineering Society during 1941 covering a survey of some 200 miles of hazardous highways in the United States showed that an investment of about \$200,000 (\$1,000 per mile) had in the course of from one to four years reduced both the rate and the severity of traffic accidents, 195 fewer deaths and \$6,000,000 less in accident costs.

Many of the year's improvements in lighting equipment and applications are serving national defense and military purposes.

G. ROSS HENNINGER.

ILO. See INTERNATIONAL LABOR ORGANIZATION.
IMMIGRATION AND NATURALIZATION SERVICE. See IMMIGRATION, EMIGRATION, AND NATURALIZATION.

IMMIGRATION, EMIGRATION, AND NATURALIZATION. The Immigration and Naturalization Service of the U.S. Department of Justice administers the Federal immigration and nationality laws.

Improvements in Administration. The transfer of the Service in June, 1940, from the Department of Labor to the Department of Justice was followed by the establishment in Washington of an improved system of administering the Field Service. Chief Supervisors of Immigration, the Border Patrol, Special Inspections, and Naturalization function under the Deputy Commissioner in charge of the Field Service. In the Central Office at Washington, the office of General Counsel has been established and administrative functions, which have increased with the growth of the Service and the increases of its work, have been newly organized under an Executive Officer, assisted by an Assistant Executive Officer, a Budget and Fiscal Control Officer, and an Instructions Officer. The Board of Immigration Appeals, formerly known as the Board of Review, has been expanded to five members, and the Examining Division of the Board has been enlarged to cope with increased work caused by new statutes and the institution of new procedures. These improvements had resulted by the end of the fiscal year, June 30, 1941, in more effective administration.

Immigration and Emigration. During the fiscal year which ended June 30, 1941, 51,776 persons, comparatively few of whom may have been here before, left their homes in foreign countries and were admitted to the United States for permanent residence, a decrease of 18,980 from the 1940 total. Aliens admitted for temporary stay or after a brief sojourn abroad, chiefly visitors, transits, and returning residents, numbering 100,008 were admitted, a decrease of 38,024, or about 27 per cent from 1940. While this does not include cruise passengers, travelers between continental United States and outlying possessions, and persons habitually crossing and recrossing the international land boundaries, it is thus clear that the number of aliens being admitted into the United States from abroad is relatively small. However, unsettled international conditions have made it imperative that the qualifications and credentials of all aliens coming to the United States be examined with even more thoroughness than heretofore.

The greatest volume of movement into and out of the United States takes place across the land boundaries. During fiscal 1941 there were 38,974,008 such entries (including each individual crossing of the border by any traveling alien or United

States citizen), of which 18,617,633 were by aliens and 20,356,375 were by citizens. The total number of admissions of all classes into the United States, after inspection by officers of the U.S Immigration and Naturalization Service, was 40,554,347.

The admissions of aliens who commenced their permanent residence in the United States and the departures of aliens for permanent residence in other countries are shown in Table I. The admissions as quota immigrants for permanent residence from countries which are assigned quotas under the Quota Act of 1924 are shown in Table II.

TABLE I—IMMIGRANT ALIENS ADMITTED AND EMIGRANT ALIENS DEPARTED, FISCAL YEARS 1940 AND 1941, BY COUNTRIES OF LAST OR INTENDED FUTURE PERMANENT RESIDENCE

Countries	Immigrants		Emigrants	
	1940	1941	1940	1941
All countries	70,756	51,776	21,461	17,115
Europe	50,454	26,541	9,143	3,326
Albania	152	2	21	
Belgium	1,713	1,816	61	14
Bulgaria	87	135	21	3
Czechoslovakia	1,074	314	39	11
Denmark	250	244	140	20
Estonia	75	41	17	3
Finland	233	244	231	36
France	2,575	4,801	542	78
Germany (& Austria)	21,520	4,028	1,978	1,758
Great Britain:				
England	5,850	7,368	998	372
Scotland	263	295	312	99
Wales	45	51	18	6
Greece	811	268	261	77
Hungary	1,902	330	136	18
Ireland (Eire)	749	211	322	52
Italy	5,302	450	1,534	104
Latvia	288	97	13	
Lithuania	262	242	24	4
Netherlands	2,097	823	108	17
Northern Ireland	90	61	75	10
Norway	488	369	276	5
Poland	702	451	81	4
Portugal	448	1,101	448	185
Rumania	333	122	83	10
Soviet Russia	40	41	114	138
Spain	259	300	447	200
Sweden	518	518	437	44
Switzerland	1,211	1,375	119	36
Yugoslavia	652	142	192	6
Other Europe	465	301	95	16
Asia	1,913	1,801	2,368	2,818
China	643	1,003	998	816
Japan	102	289	1,078	1,823
Palestine	850	268	66	14
Syria	111	14	29	
Other Asia	207	227	197	165
Canada	10,806	11,280	769	835
Newfoundland	272	193	35	46
Mexico	2,313	2,824	4,584	4,392
Cuba	2,062	3,917	577	773
Other West Indies	613	770	723	657
Central America	639	1,239	470	637
South America	1,115	2,216	1,004	1,352
Africa	202	564	93	98
Australia	156	137	126	106
New Zealand	51	57	36	50
Other countries	160	237	1,533	2,025

Note 1.—The number of immigrants given above as admitted include not only quota immigrants as shown in Table II but nonquota immigrants, being wives of citizens, husbands who married citizen wives prior to July 1, 1932, children of citizens, etc. It will also be noted that this table is based on the country of last residence of the immigrant. These figures do not, therefore, agree accurately with the immigration quota figures included in Table II, because the quota under which any immigrant is admitted is that of the country of his birth, not that of the country of his last residence. Note 2.—Immigrants admitted from the "barred zone" of Asia are mainly persons of the white race.

The number of aliens debarred at ports of entry during 1941 was 2,929. Of these 2,076 were not permitted to enter because they were without valid consular visas, and 322 were refused entry because they were likely to become public charges.

Repatriations and Deportations. The Immigration

and Naturalization Service is authorized to remove to other countries at government expense aliens who have fallen into distress or need public aid from causes arising after their entry and who want to be so removed. Under these provisions, 185 applications were received during the fiscal year 1941. Of these 167 were granted and 152 aliens were so repatriated.

TABLE II—ANNUAL QUOTAS ALLOTTED UNDER 1924 ACT, AND QUOTA IMMIGRANTS ADMITTED, FISCAL YEARS 1940 AND 1941, BY COUNTRIES OR REGION OF BIRTH AND SEX

Nationality or country of birth	Annual quota	Quota immigrants admitted in	
		1940	1941
All countries	153,774	51,997	36,220
Albania	100	88	7
Belgium	1,304	441	1,171
Bulgaria	100	92	102
Czechoslovakia	2,874	1,979	1,787
Danzig, Free City of	100	100	40
Denmark	1,181	255	318
Estonia	116	98	63
Finland	569	282	355
France	3,086	741	1,823
Germany	27,370	26,083	13,051
Austria			
Great Britain & N. I.			
England	65,721	1,974	3,332
Northern Ireland			
Scotland			
Wales			
Greece	307	346	232
Hungary	869	1,432	584
Ireland (Eire)	17,853	966	331
Italy	5,802	3,905	674
Latvia	236	184	171
Lithuania	386	294	232
Luxemburg	100	24	85
Netherlands	3,153	1,093	1,103
Norway	2,377	456	448
Poland	6,524	4,354	4,406
Portugal	440	417	315
Rumania	377	469	286
Soviet Russia	2,712	1,614	1,584
Spain	252	225	265
Sweden	3,314	411	285
Switzerland	1,707	617	759
Yugoslavia	845	651	238
Other Europe	500 ²	175	141
Asia	1,649 ²	797	650
American colonies		374	250
Other quota regions	1,850 ²	396	508
Sex: Male		26,463	18,291
Female		25,534	17,929

¹ Includes aliens to whom visas were issued during the latter part of the preceding year which were charged to the quota for that year. Nationality for quota purposes does not always coincide with actual nationality. See section 12 of the act.

² Quota for colonies, dependencies, or protectorates included with allotment for the European country to which they belong.

During the fiscal year, 4,407 aliens were deported under warrants of deportation, and 6,531 deportable aliens were allowed to depart at their own expense without warrants of deportation. The total of enforced departures was thus 10,938, as compared with 15,548 during the previous year. The use of more effective methods in preventing illegal entry and the present impossibility of obtaining transportation for aliens deportable to many European countries are among the reasons for this decrease.

The principal classes of aliens deported under warrants were, in order, "entered without valid visa," "criminals," "previously debarred or deported," and "remained longer than authorized." Over half of the aliens deported, or 2,752, were returned to Mexico; 957 were returned to Canada; 251 to Europe; 135 to Asia; and 312 to other countries.

The Border Patrol. Unsettled international conditions increase the responsibilities of the Border Patrol. The average size of the force of Border Patrol officers and employees of all grades on duty during the fiscal year 1941 was 1,465. The transportation

consisted of 514 automobiles, 36 trucks, 26 saddle horses, 15 patrol boats, and 15 outboard motor craft.

During the fiscal year, officers of the Border Patrol patrolled 12,207,780 miles and questioned 3,518,353 persons. Criminal prosecutions totalling 1,804 resulted from Border Patrol apprehensions of persons for violation of the immigration laws. These were disposed of by 1,746 convictions and but 58 acquittals and dismissals.

Aliens and Alien Registration. Under the Alien Registration Act of 1940 (see YEAR BOOK for 1940), the Immigration and Naturalization Service was required to register and fingerprint, through post offices, all aliens in the United States, except foreign government officials and members of their families. Aliens in the United States on Aug. 27, 1940, were given until Dec. 26, 1940, to register. Aliens coming to the United States after Aug. 27, 1940, and expecting to remain more than 30 days, are required to be registered and fingerprinted within that time. During the four-months' period, 4,741,971 aliens were registered in continental United States, Alaska, Hawaii, Puerto Rico, and the Virgin Islands of the United States. Their States of residence are shown in Table III. By Oct. 24, 1941, 4,921,452 aliens had registered in continental United States, its Territories, and possessions. Their classification by continent and country of birth is shown in Table IV. See the article entitled ENEMY ALIENS.

TABLE III—DISTRIBUTION OF ALIEN REGISTRANTS BY STATES
(Registrations completed during the registration period ending Dec. 26, 1940)

State	Alien population	Percentage	Order
New York	1,212,622	25.7	1
California	526,937	11.1	2
Pennsylvania	361,475	7.6	3
Massachusetts	356,028	7.5	4
Illinois	319,385	6.7	5
Michigan	290,730	6.1	6
New Jersey	270,973	5.7	7
Texas	204,450	4.3	8
Ohio	196,214	4.1	9
Connecticut	152,664	3.2	10
Washington	82,644	1.7	11
Wisconsin	72,928	1.5	12
Minnesota	58,584	1.2	13
Rhode Island	52,339	1.1	14
Maine	45,597	1.0	15
Indiana	42,220	0.9	16
Missouri	42,049	0.9	17
Florida	38,218	0.8	18
Maryland	36,446	0.8	19
Oregon	33,859	0.7	20
Arizona	30,699	0.7	21
New Hampshire	29,485	0.6	22
Colorado	26,689	0.6	23
Iowa	24,015	0.5	24
West Virginia	23,295	0.5	25
District of Columbia	19,111	0.4	26
Nebraska	18,601	0.4	27
Louisiana	16,601	0.4	28
Kansas	16,180	0.3	29
Vermont	15,627	0.3	30
Montana	13,639	0.3	31
New Mexico	12,123	0.3	32
Utah	10,100	0.2	33
North Dakota	9,902	0.2	34
Virginia	9,729	0.2	35
South Dakota	6,957	0.2	36
Oklahoma	6,671	0.1	37
Delaware	6,294	0.1	38
Nevada	6,219	0.1	39
Idaho	5,938	0.1	40
Wyoming	5,745	0.1	41
North Carolina	5,331	0.1	42
Tennessee	5,019	0.1	43
Alabama	4,952	0.1	44
Kentucky	4,902	0.1	45
Georgia	4,849	0.1	46
Arkansas	3,210	0.1	47
Mississippi	3,003	0.1	48
South Carolina	725	0.1	49

TABLE IV—NUMBER OF ALIENS REGISTERED IN THE UNITED STATES¹

By continent	Total	Per cent
Total	4,921,452	100.0
Europe	3,572,911	72.7
North and Central America	1,050,450	21.3
Asia	173,160	3.5
Oceania	93,976	1.9
South America	21,390	.4
Africa	5,050	.1
Other	4,515	.1

Fifteen Countries with Largest Number	Total	Per cent
Italy ²	695,363	14.1
Canada	448,012	9.1
Poland	442,553	9.0
Mexico	416,893	8.5
Russia ³	366,842	7.5
Germany	314,715	6.4
Great Britain ⁴	291,593	5.9
Austria	191,594	3.9
Irish Free State	158,249	3.2
Hungary	116,696	2.4
Sweden	102,178	2.1
Austria-Hungary	94,510	1.9
Japan ⁵	91,858	1.9
Lithuania	86,835	1.8
Philippine Islands	83,677	1.7

¹ Includes the Territories of Alaska and Hawaii, District of Columbia, Puerto Rico, and the Virgin Islands

² Does not include Italian African Possessions.

³ Includes Russia in Asia

⁴ Does not include Northern Ireland, British Asiatic Possessions, British Pacific Possessions, British African Possessions, British West Indies, and British Guiana

⁵ Does not include Korea and Japanese Pacific Possessions

Naturalization. The desire of aliens to become citizens of the United States continued with increased intensity. In the fiscal year 1941, 224,123 declarations of intention were filed, as compared with 203,536 in 1940 and 155,691 in 1939. Petitions for naturalization numbered 277,807, and certificates of naturalization issued, 277,294.

The nations to which aliens admitted to citizenship during the fiscal year, 1941, formerly owed allegiance were: British Empire, 72,760; Italy, 40,827; Poland, 31,654; Germany, 27,719; Soviet Russia, 19,939; Czechoslovakia, 10,890; Sweden, 8,128; Hungary, 7,992; Yugoslavia, 7,867; Greece, 4,913; all other countries, 44,605.

New Legislation. Of the numerous proposals advanced in Congress affecting aliens, several of importance were enacted into law.

The Act of July 1, 1940, required aliens admitted into the United States as officials of foreign governments either to maintain their status or to depart from the United States, with the approval of the Secretary of State.

The Act of July 2, 1940, provided that native-born women who have heretofore lost their citizenship by marriage to aliens, were restored to citizenship if they had resided continuously in the United States since the date of marriage.

Another Act of July 2, 1940, related to the naturalization of certain aliens who entered the United States under 16 years of age, and who filed petitions to become citizens within one year after reaching their twenty-first birthday. This Act, however, has been regarded as being in conflict with the Nationality Act (see YEAR BOOK for 1940) which became effective Jan. 13, 1941.

Two bills of a fiscal nature were enacted into law, that of Aug. 22, 1940, providing for the deposit of certain collections for overtime service to the credit of the appropriation for the payment of such compensation, and that of Oct. 10, 1940, providing better facilities for the enforcement of customs and immigration laws relating to ports, as well as the erection of fences and gates at the international boundaries.

The Act of June 20, 1941, authorized the re-

fusing of visas to aliens whose admission to the United States would endanger public safety.

The Act of June 21, 1941, extended the provisions of the Act of May 22, 1918, providing that during the existence of the present national emergency which was proclaimed by the President on May 22, 1941, or when the United States is at war, the President may, by proclamation, restrict the entry and departure of persons from the United States. See REFUGEES.

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IMPORTS. See TRADE, FOREIGN and articles there referred to. For import revenues, see CUSTOMS.

IMRO. See BULGARIA under *History*.

INAUGURATION. See DEMOCRATIC PARTY; UNITED STATES.

INCENDIARIES. See BOMBS.

INCINERATION. See GARBAGE AND REFUSE DISPOSAL.

INCOME, INCOME TAXES. See AGRICULTURE; LIVING COSTS AND STANDARDS; NATIONAL INCOME; PUBLIC FINANCE; TAXATION.

INDIA. A dependency of the British Empire, consisting of British India, or the territories subject to British law, and the Indian States, ruled by native princes but under the indirect control of the British Parliament. Capital, New Delhi. Summer seat of government (April to October), Simla.

Area and Population. The total population of British India and the Indian States under British control (except Burma) was officially estimated at 365,900,000 on Jan. 1, 1939. The area and population of the British (governors') provinces and of the Indian States and Agencies at the 1931 census are shown in the accompanying table.

BRITISH PROVINCES AND INDIAN STATES—
AREA AND POPULATION

British Provinces	Area in sq. miles	Population, 1931
Ajmer-Merwara	2,711	560,292
Andamans and Nicobars	3,143	29,463
Assam	67,334	9,247,857
Baluchistan	134,638	868,617
Bengal	82,955	51,087,338
Bihar and Orissa	111,702	42,329,583
Bombay (Presidency)	151,673	26,398,997
Aden ^a	80	51,478
Burma ^a	233,492	14,667,146
Central Provinces and Berar	131,095	17,990,937
Coorg	1,593	163,327
Delhi	673	636,246
Madras	143,870	47,193,602
Northwest Frontier Province	36,356	4,684,364
Punjab	105,020	24,018,639
United Provinces	112,191	49,614,833
Total Provinces	1,318,346	289,491,241
<i>Indian States and Agencies</i>		
Baroda State	8,164	2,443,007
Central India Agency	51,597	6,632,790
Cochin State	1,480	1,205,016
Gwalior State	26,367	3,523,070
Hyderabad State	82,698	14,436,148
Jammu and Kashmir States	84,516	3,646,243
Mysore State	29,326	6,557,302
Punjab States	31,241	4,472,218
Rajputana Agency	129,059	11,225,712
Sikkim	2,818	109,608
Travancore	7,625	5,065,973
Western India Agency	35,442	3,999,250
Total States	490,333	63,346,537
Total Provinces	1,318,346	289,491,241
Total India	1,808,679	352,837,778
India without Burma	1,575,187	338,170,632

^a Separated from India in 1937.

NOTE.—Figures for the Provinces include those of the States attached to them except in the case of Madras, where they exclude Cochin and Travancore.

According to preliminary results of the census taken in March, 1941, the population was 388,-

800,000, of whom 200,928,000 were males and 187,872,000 females. The Provinces of British India contained 295,827,000 inhabitants and the Indian States and Agencies 92,973,000. The total population increased by 50,681,000, or 15 per cent, between 1931 and 1941 as compared with a 10.6 per cent increase between 1921 and 1931. The largest percentage increases in the British Provinces during 1931-41 were: Delhi, 44.1; Northwest Frontier Province, 25.2; Punjab, 20.4; and Bengal, 20.3; and in the States and Agencies: Punjab States, 21.4; Travancore, 19.1; and Cochin and Rajputana, 18.1 each. Calcutta, with a population of 2,100,000 in 1941 (excluding suburbs), replaced Bombay as the largest city; it showed an increase of 968,000, or nearly 85 per cent, for the decade. There are only about 34 towns with a population of 100,000 or more as nearly three-fourths of the inhabitants are agricultural, living in some 750,000 villages.

Registered births in the British provinces in 1938 numbered 9,398,011 (34.1 per 1,000); deaths, 6,685,120 (24.3 per 1,000). Populations of the chief cities at the 1931 census, with provisional 1941 returns in parentheses, were: Calcutta, with suburbs and Howrah, 1,485,582; Bombay, 1,161,383 (1,490,000); Madras, 647,230; Hyderabad, 466,894; Delhi (including Shahdara, New Delhi, and Cantonment), 447,442; Lahore, 429,747; Ahmedabad, 313,789 (592,000); Bangalore, 306,470; Lucknow, 274,659 (382,000); Amritsar, 264,840; Karachi, 263,565 (360,000); Poona, 233,855 (238,000); Cawnpore, 243,755 (437,000); Agra, 229,764 (284,000); Nagpur, 215,165; Benares, 205,315 (259,000).

Education and Religion. Of 296,301,570 persons over five years of age enumerated for literacy at the 1931 census, 28,138,856 were able to read and write. Those with a knowledge of English numbered 3,600,000, but only 319,000 used English as their normal medium of speech. The rest of the population was divided into more than 20 major language groups and innumerable subsidiary groups. In British India there were 226,331 schools of all kinds in 1937-38 with an enrollment of 13,831,707 pupils. About one-half of the primary schools were aided or maintained by the government. Universities numbered 15 with 10,139 students. The 1931 census showed 229,195,140 Hindus, 77,677,545 Moslems, 12,786,806 Buddhists, 8,280,347 followers of tribal cults, 6,296,763 Christians, 4,335,771 Sikhs, 1,252,105 Jains, 109,752 Zoroastrians, and 24,141 Jews.

Production. Recent harvests in metric tons (in the 1939-40 season unless otherwise stated) were: Wheat, 10,093,400; rice, 38,532,000 (excluding several States); cane sugar, 2,770,000; tobacco, 495,800 (excluding most Indian States); cotton, 907,200; barley (excluding Indian States), 2,119,500 (1938-39); corn (excluding Indian States), 2,080,800 (1938-39); coffee (incomplete returns), 16,000 (1938-39); tea, 205,000 (1938-39). Jute production (1939) was 1,748,100 metric tons. Estimated production of oil seeds in British India in 1939-40 was (in long tons): Peanuts, 3,002,000; rape and mustard, 1,097,000; linseed, 467,000; castorseed, 94,000; sesame, 415,000. India has nearly one-third of the world's total cattle population. In British India alone there were over 84,000,000 cattle, 30,000,000 water buffaloes, 22,000,000 sheep and 26,000,000 goats in 1935.

Metallurgical and mineral output was (in metric tons): Steel ingots and castings, 1,365,000 in 1940; pig iron, 2,000,000 in 1940; coal (British India only), 25,044,000 in 1939; iron ore, 1,790,000 in

1938; copper (smelter), 6,800 in 1939; manganese ore, 669,000 long tons in 1939; rock salt, 166,000 long tons in 1939. The 1940 gold output was 9,000 kilograms. The leading manufacturing industries, with the number of workers employed in 1937, were: Cotton spinning and weaving, 474,134; jute mills, 305,785; cotton ginning and pressing, 133,210; railway and tramway workshops, 104,691; sugar factories, 76,523; tea factories, 65,453; rice mills, 43,856; general engineering, 43,571; iron and steel smelting and steel rolling mills, 39,818. The European War forced a rapid expansion of manufacturing after 1939.

Foreign Trade. The accompanying table shows the development of India's merchandise trade in 1939 and 1940 (calendar years).

	1939 rupees	1940 rupees
Exports:		
Indian merchandise	1,803,687,000	2,083,547,000
Reexports	89,834,000	101,598,000
Imports	1,893,522,000	2,185,145,000
Export surplus	1,610,313,000	1,630,124,000
Export surplus	283,209,000	555,021,000

For the 12 months ended Nov. 30, 1940, the chief exports were (in 1,000 rupees): Jute manufactures, 596,374; tea products, 262,535; raw cotton, 267,673; raw jute, 165,928; cotton manufactures, 131,617; oilseeds, 114,541. Leading imports were (in 1,000 rupees): Grain, 284,595; petroleum products, 189,703; machinery, 136,818; cotton goods, 123,343; raw cotton, 97,139. The distribution of exports for the period January–November, 1940, was (1,000 rupees): United Kingdom, 715,083; other parts of British Empire, 447,513; United States, 247,655; Japan, 100,997. The principal sources of imports for the same period were (1,000 rupees): United Kingdom, 392,257; other parts of British Empire, 488,185; United States, 221,659; Japan, 189,264.

Finance. For the fiscal year ending Mar. 31, 1942, the Central Government's budget estimates anticipated revenues of 1,063,900,000 rupees and expenditures of 1,268,500,000. Actual receipts in 1940–41 totaled about 1,037,100,000 rupees; expenditures, 1,121,300,000. Defense appropriations in the 1941–42 budget were 841,300,000 rupees; civil expenditure estimates, 427,200,000 rupees. Defense costs covered only the expense of defending India's own borders. Indian troops abroad were supported by the British Treasury and the British Government provided without charge much of the equipment for modernizing the army in India (see *History*). The funded debt as of Mar. 31, 1940, amounted to 4,502,300,000 rupees and £280,100,000. Early in 1941 the government effected compulsory repatriation of all of India's outstanding terminable sterling debt to a total of £90,000,000. It was replaced by rupee and other securities bearing a lower rate of interest. Average exchange value of the rupee was \$0.3328 in 1939 and \$0.3016 in 1940.

Transportation. The Indian railway mileage on Mar. 31, 1940, was 41,156 (Imperial state lines, 29,731; Indian state lines, 7,131). The Imperial state lines in 1940–41 reported a surplus of 145,900,000 rupees and gross traffic revenues of about 1,092,500,000 rupees. Roads in British India in 1940 extended 319,131 miles. Highway expenditures were increased from 7.8 million rupees in 1939–40 to 10.8 million in 1941–42. Air service was provided by local airlines and by the British and Dutch international trunk lines. Vessels entering the ports with cargoes in the coastal trade in 1938–39 had a tonnage of 16,444,179.

Government. The King of Great Britain and Northern Ireland also bears the title of Emperor of India. The Constitution, known as the Government of India Act, 1935, provided for an Indian federation and provincial autonomy. Provincial autonomy went into effect Apr. 1, 1937, when elective legislative assemblies with responsible ministries were established in the 11 Governors' Provinces under direct British rule. In October–November, 1939, the All-India Congress ministries in seven of the 11 provinces resigned and on Nov. 5, 1939, the Governor General utilized his emergency powers to restore all governing powers in these provinces to the appointive British governors (see 1939 YEAR BOOK, p. 360). Parliamentary government was retained in the other three provinces throughout 1941.

The federation scheme provided for the union under a central government of the 11 Governors' Provinces and the 584 Native States ruled by Princes owing suzerainty to the British Crown. For different and often contradictory reasons federation was opposed by most of the politically vocal elements in India (see preceding YEAR BOOKS). Following the outbreak of the European War, the Governor General announced Sept. 11, 1939, that no further steps toward federation would be taken until peace was concluded.

In the meantime executive powers were concentrated in the hands of the Governor General, or Viceroy, who is appointed by the Crown, usually for five years, and assisted by an appointive Council, composed of high officials responsible for the various administrative departments. The Governor General also holds the separate office of Crown Representative (established Apr. 1, 1937) through which he performs the functions of the Crown in relation to the Native States. Pending the federation of the Governors' Provinces and Native States, the Governor General remained under the direction of the Secretary of State for India in the British Cabinet, and the Central Legislature of British India, established in 1921, continued in existence. The Legislature consisted of a Council of State of 32 elected and 26 nominated members (serving five years) and a Legislative Assembly of 102 elected and 39 nominated members (serving three years). The Central Legislature's actions were not binding on the Governor General and his Cabinet.

The All-India Congress, the most powerful Indian political party, captured 57 of the 102 elective seats in the Legislative Assembly in the 1934 elections. Due to delay in putting the federation scheme into effect, the Governor General extended the life of the 1934 Legislative Assembly by four successive acts to Oct. 1, 1941. Governor General and Crown Representative, the Marquess of Linlithgow, who assumed office Apr. 18, 1936. See below for political developments during 1941.

HISTORY

India in 1941 took an active part in the war of the British Empire against Germany and Italy, yet none the less carried on her own political struggle against British domination and for self-government. She thus offered the strange spectacle of a third party at grips with both at once of a pair of antagonists engaged in a struggle of their own. It helps to an understanding of India's position if one bears in mind, first that the several warlike Indian minority peoples gave abundant military aid to Britain, while the agitation for immediate and full self-government had behind it a great body of Hindus opposed to direct violence in every form. The number of political leaders who both opposed Great Britain and advocated violence in that op-

position was almost nil. Among the warlike minority peoples few individuals shared in the nationalist enthusiasm so keenly as to dull the readiness to enlist in the Indian forces.

The political institutions underwent little actual change, but throughout the year the possibility of such change repeatedly appeared in the course of the dispute over the country's future status. The manufacturing industries of India, steadily augmenting their output of a wide variety of goods essential to war, made the country the British Empire's chief arsenal in the Orient. The abnormal suspension of changes in the tenure of places of high authority continued. The British Crown extended the Marquess of Linlithgow's term as Viceroy until April, 1943. The Viceroy added a year to the terms of members of the Central Legislature. The British Parliament prolonged for the same period the emergency powers of appointive Governors to rule the seven provinces in which the All-India Congress's parliamentary ministries resigned in 1939. In the four remaining provinces, where ministers responsible to the provincial parliaments had not been overthrown, the parliamentary system weathered another year.

The Viceroy's Executive Council was augmented in July to a total of 12 members, from the previous seven; by this measure the Viceroy sought, not only to lighten the assigned tasks that the activity incidental to war had made heavy for the individual members, but also to bring Hindus of good standing into contact with the central administration even though many leading Hindu bodies held aloof in protest against the deferment of nationalistic aims.

Campaign for Indian Autonomy. Linlithgow's proposal of Aug. 8, 1940, which embodied an offer to let representatives of India write their own constitution, under which the land could take rank as a dominion in the British group of autonomous governments, brought no more accord in 1941 than it had brought in the year before. L. S. Amery, Secretary of State for India, pointed out in the British House of Commons, April 23, that the British Government attached to this offer two conditions: India must provide for due fulfilment of obligations that Great Britain's long connection with India had imposed; and the proposed constitution must spring from "agreement between the principal elements of India's national life," lest it make strife and chaos instead of order.

These British offers again failed to win the favor of the All-India Congress party. The Nationalists objected, in part, that they wanted an immediate settlement of their political status and would not willingly wait until the end of the war. Some of them had reason, as devotees of non-resistance, to dislike Amery's reference of April 23 to the need for "growth of India's own capacity to defend herself unaided." The offer to let Indians make their own constitution did not necessarily signify that they should make it by universal suffrage; but Nationalists demanded the election, by universal adult vote, of the members of a constituent assembly—that is, by a vote in which souls, those of pacifists included and prevailing, would outweigh swords. The ambition to bring about this triumph of the lamb over the lion inhered in the very beliefs of the non-resistants; but it caused them to put aside the thought that at this very moment the British power was relying on the pugnacity of about 750,000 men recruited mainly from the warlike minorities of India to help in many such violent tasks as driving Britain's enemies from northern Africa, holding Suez and Singapore, and shutting off

hostile access to India itself through Iraq or Iran. Amery rejected the desired universal vote in a speech at Manchester November 18.

New irritants found their way from time to time into the controversy. A gathering in the spring, at Bombay, including a number of Indian statesmen not associated with either of the chief parties (Congress Party and Moslem League), produced a resolution for creating a new Executive Council, responsible during the war to the Crown alone and not to the legislature. The leader of the Moslem League rejected the resolution's proposal and denounced the document as a trap set up by some friends of the Congress Party in order to catch and discredit opponents. The Nationalists as a body had reason to feel bitterly antagonistic to a proposal the very reverse of their demands for the immediate establishment of a government on their own terms, war or no war. Amery's speech of April 23 in the British House of Commons made it plain, at some length, that the British Government had no liking for the Bombay resolution nor for its advocacy by Sir Tej Bahadur Sapru, veteran of the Round Table Conferences of 1930-32. The proposal, disowned by all who could have made it formidable, was finally dropped. Presently, however, the issue in August of the Atlantic Charter (q.v.) raised in India the question whether the broad declarations of the Charter were to apply there. Churchill declared at Westminster, September 19, that "the joint declaration did not qualify in any way the various statements of policy which had been made from time to time about the development of constitutional government in India." Indian discontent with this exclusion of the country from any concessions that it might have claimed by benefit of the Atlantic Charter took form in resolutions of the Indian Legislature expressing "deep discontent."

Gandhi and the Congress Party. While the formal political situation in India showed little or no improvement over 1940, a gradual but material change occurred in sentiment within the Congress Party. This body held the majority of the seats in the lower house of the Central Legislature; it controlled the vote of a great mass of the non-Moslem majority of the population; and it consisted essentially of a relatively small number of constantly active members. The chief of these at the outset of the year were Mohandas K. Gandhi, Maulana A. K. Azad, and Jawaharlal Nehru. Gandhi, member of the party's working committee, better known in India and out of it than any other Indian, veteran commander in the bloodless war of "civil disobedience" waged against British rule, led the party and shaped its course. Azad was President of the party, Nehru former president. Gandhi's campaign of passive resistance to the British, started in September, 1940, was in operation. Though no acceptable estimate of the number participating in it appeared, it evidently disturbed the country's routine of life enough to embarrass and worry the government. Gandhi's object was to compel the British regime to grant India self-government right away, on the party's own terms, without consideration of the hindrance that the incidental popular disturbance and change might make for Great Britain as a belligerent against Germany, Italy, and potentially Japan.

The Viceroy's government stood firm against acts of civil disobedience involving offense against the Defense of India Act. It had sent Nehru to prison in November of 1940; Azad in turn was arrested, Jan. 3, 1941, and sentenced to prison for 18 months. Hundreds of other active members of the

party were put in prison for more than brief terms between September, 1940, and December, 1941. Gandhi himself remained at liberty, having on a former occasion made himself more formidable in confinement than at large. On his part, Gandhi took care in various ways so to limit civil disobedience as to avoid reproach of giving palpable help by it to Britain's enemies. He declared, April 21, that the movement was neither anti-Moslem nor anti-British; at the same time he denied that the movement was causing a then-active outbreak of riots between Moslems and Hindus, which kept up over much of the year and brought about the deaths of many hundreds of the common people. Gandhi declared, October 12, the hope that Britain and Germany would grow exhausted and soon make peace without either's defeat.

Gandhi's plan to win self-government in the moment of Britain's necessity formed a serious threat to British rule. It made use of the impatience of the Congress Party to deliver to the people the blessings promised. Yet it lost ground during 1941 and by the end of the year had apparently come to the verge of failure. Two troubles developed in its functioning. The active men of the Congress Party had begun to find that civil disobedience had failed to obtain the results desired. At the same time the German advance through western and southern Russia in the autumn brought German forces near enough to India to furnish a subject of real concern. The British authorities seized the consequent opportunity to win the party from Gandhi's control. They released simultaneously, December 4, about 500 imprisoned members of the party, among them, Azad and Nehru, all of the number had been imprisoned on account of acts of civil disobedience. After the wholesale release the press reported expectation that the Congress Party would change its attitude to Britain; and soon Gandhi, requesting to be relieved of leadership of the party, was accordingly put aside by the party's working committee. Gandhi's letter to the committee declared that he would separately continue civil disobedience in concert with people of his selection. He intimated that the committee was no longer altogether against participation in aid to Britain in the war. He was taken to mean that he laid down his partisan stewardship from disapproval of an impending shift in the Congress Party toward some degree of cooperation with the British authorities.

Indian Military Effort. India, even without its hundreds of millions of pacifist supporters of the Congress Party, commanded great human and material resources for war and put them in great measure to use. The armed forces of India were reckoned at some 500,000, as stated in the Indian Legislative Assembly, February 28. Gen. Wavell gave the number as nearly 750,000, August 14. The corresponding total before the war (1938) was 292,000. The later approximations no doubt included most or all of a considerable total of Indian forces serving elsewhere. Early in 1941 the total serving abroad was estimated at 60,000. The warlike elements of the population displayed readiness for voluntary enlistment, and many of the native princes took a vigorous part in the military effort. The Indian manufacturing industries were stated in April to be supplying some nine-tenths of all the supplies necessary to the country's armies and in particular to be turning out rifles, machine-guns, and cannon, as well as some tanks. A factory was preparing to make airplanes. Much of the output of the divers warlike industries depended chiefly on the rising and prosperous Indian industry in the production of iron and steel.

In connection with India's place in the war, the establishment of a direct diplomatic link with the United States helped the Indian effort. The governments of India and the United States assigned envoys to each other, July 20-21. Sir Girja Shankar Bajpai went to Washington as Agent General for India in the United States. Thomas M. Wilson became United States Commissioner to India. Sir Girja reported early in December that goods were beginning to pass from the United States to India under the lease-lend act.

See BIRTH CONTROL; CHEMISTRY, INDUSTRIAL; GREAT BRITAIN under *History*; SEISMOLOGY.

INDIA, Portuguese. See PORTUGAL under *Colonial Empire*.

INDIANA. An east north central State. Area: 36,291 sq. mi., including 86 sq. mi. of inland water, but excluding part of Lake Michigan, 228 sq. mi. Population: (1940 census) 3,427,796. The urban population comprises 55.1 per cent of the total (U.S. average, 56.5 per cent); non-white population, 3.5 per cent (U.S. average, 10.2); elderly (65 years and over), 8.3 per cent. Indiana ranks 37th among the States in area, 12th in population, and 11th in density, with an average of 94.7 persons per square mile. The largest city and capital is Indianapolis with 386,972 inhabitants. There are 92 counties and 35 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Clement A. Malan, Superintendent of Public Instruction, there were 656,229 pupils enrolled in the public schools of Indiana during the school year 1940-41, 459,434 in elementary schools and 196,795 in secondary schools. Teachers numbered 23,240 and received an annual average salary of \$1,321.15. Gross total expenditures for the year were \$66,067,493 (current, \$52,932,410). For higher education, see *Indiana* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 9,789, of which 9,765 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 1,003,240; 856,528 were private and commercial automobiles, 1,321 busses, and 136,157 trucks and tractor trucks. Gross motor-fuel consumption was 700,360,000 gallons. Net motor-fuel tax receipts were \$26,068,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$10,596,000. See ROADS AND STREETS.

Railways of all classes extended 6,899 miles (Dec. 31, 1939) 2.93 per cent of the total mileage in the United States. Class I steam railways (3,277 miles) reported 28,388,569 tons of revenue freight originating in Indiana in 1940 and 38,333,148 tons terminating in Indiana. There are 46 airports and landing fields in the State (15 lighted fields) and two seaplane anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 646 civil aircraft in the State and 1,971 airline transport, commercial, and private pilots (1,682 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 9,986,000, as compared with 9,845,800 acres in 1940. According to the latest census, there are 184,549 farms, valued at \$1,251,491,614, averaging 107.3 acres each. Farm population numbered 818,220 or 23.9 per cent of the total. Leading crops with production were: Corn, \$122,151,000, 177,030,000 bu.; wheat, \$34,705,000, 34,665,000

bu.; hay, \$24,081,000, 2,435,000 tons; oats, \$21,648,000, 54,120,000 bu.; soybeans, \$21,100,000, 14,552,000 bu.; commercial truck crops, \$12,762,000.

Manufacturing. According to the latest census (covering the year 1939) the total value of manufactured products was \$2,227,648,011. For details, see 1940 YEAR BOOK.

Mineral Production. Leading products in 1940 were (with 1939 figures in parentheses): Pig iron, 5,333,915 net tons valued at \$97,407,801 (3,780,364 net tons, \$68,164,618); coke, 6,412,716 net tons (4,878,033 net tons, \$28,532,944); coal, 18,565,000 net tons (16,650,000 net tons, \$24,642,000), stone (incomplete figures) 4,498,490 short tons, \$5,822,006 (4,338,690 short tons, \$7,469,659). Clay products other than pottery and refractories were valued at \$5,629,014 in 1939. The total value of production in 1939, according to the U.S. Bureau of Mines, was \$53,423,223 or 1.26 per cent of the United States total. (Duplications are eliminated in State totals; e.g. pig iron and coke are omitted.) Indiana ranks 19th among the States in value of minerals produced.

Trade. According to the 1940 census there were 4,842 wholesale establishments in Indiana, employing 23,555 persons, reporting net sales for 1939 of \$847,035,000 and annual pay roll of \$42,844,000. There were 47,317 retail stores with 123,192 employees, reporting sales of \$1,066,383,000 and pay roll of \$110,895,000. Service establishments numbered 16,662, employing 20,434 persons for \$17,479,000 per year, and reporting a business volume amounting to \$64,131,000. The leading business center of the State is Indianapolis which reported wholesale sales of \$374,483,000, retail sales of \$188,553,000, and \$17,976,000 receipts for its service establishments. Fort Wayne reported sales of \$47,614,000 wholesale and \$56,175,000 retail; Evansville, \$51,544,000 and \$45,234,000, respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Indiana was \$68,812,000. Under the Social Security program, financed by Federal funds matching State grants, 67,236 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$18.52 (U.S. average pension, \$21.08); 35,108 dependent children in 17,032 families received average monthly payments of \$29.05 per family (U.S. average, \$32.73); and 2,369 blind persons received \$20.84 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 23,490 and received \$13.75 (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 2,651 (\$176,000); NYA student work program, 7,872 (\$53,000); NYA out-of-school work program, 10,886 (\$227,000); WPA, 34,067 (\$1,858,000); other Federal emergency projects, 62 (\$6,000); regular Federal construction projects, 41,392 (\$8,839,000) The Farm Security Administration certified subsistence payments totaling \$4,000 for the month to 178 cases.

Legislation. The General Assembly convenes in regular session on Thursday after the first Monday of January in odd years. It is composed of 50 Senators (19 Democrats and 31 Republicans in 1941) and 100 Representatives (36 Democrats and 64 Republicans). The 1941 General Assembly passed 239 measures and approved three constitutional

amendments. Of the latter, two would extend the terms of county officers and the third, if adopted, would enable municipalities to adopt the city manager form of government.

The most important legislative subject of the session was the reorganization of the State government, undertaken by a Republican legislature despite the opposition, in important instances, of the Democratic governor. The net result of the reorganization measures was to repeal enactments of a Democratic legislature in 1933 and to divide authority, by them solely entrusted to the Governor, between the Governor and other elective officials. Most of the measures were passed over the Governor's veto or became law without his signature. Several bills were subsequently pronounced unconstitutional, or partly so, by the State Supreme Court, which was also of Democratic complexion, and others were inoperative in part. As a result, a good deal of confusion still existed at the end of the year.

Two election laws also were being contested before the State Supreme Court at the end of the year, one creating bi-partisan county voter registration boards in the seven largest counties of the State, and the other postponing election of mayors in all cities except Indianapolis from 1942 to 1943. Other election laws put the Two Per Cent Club back under the corrupt practices act; eliminated the requirement that candidates file petitions of voters along with declarations of candidacy; barred from the ballot parties or organizations having any relations with foreign governments; permitted party watchers at the polls.

Budget appropriations totaled \$41,878,472 for the fiscal year 1941-42 and \$40,641,160 for 1942-43; in addition, \$430,500 was made available in special appropriations, Apr. 1, 1941, of which \$160,000 was for the expense of the 1941 session. The chief change in the tax structure was the reduction of gross income tax from one to one-half of one per cent for retail merchants and to one-fourth of one per cent for manufacturing processors. Disabled war veterans were given \$1,000 exemption from taxable property in addition to any other exemptions they are entitled to.

A reapportionment measure divided the State into 11 instead of 12 Congressional districts to conform to the 1940 Census. Commissions were established to study wage and hour legislation, traffic needs of the State, and the economic needs of agriculture. In the field of agriculture were a number of other acts including changes in the election procedure for soil conservation districts, reestablishment of the milk control law for two years and recreation of the State Egg Board; both the milk and egg boards were given consumer representation.

Cities were authorized to levy a tax rate up to seven cents to aid privately-owned hospitals. Fourth-class cities were authorized to establish sanitary districts. Rigid conditions were established for incorporation of a community in Marion County. Statutory limitations on tax levies for Indianapolis were removed.

The State welfare laws were liberalized with the increase of old-age and blind assistance from \$30 to \$40 a month, repeal of the requirement that recipients assign property to the county welfare department for reimbursement, and increase of maximum unemployment benefits from \$15 to \$16 and of payment period from 15 to 16 weeks. Townships were permitted to require able-bodied indigents to do needed work in return for assistance.

The Juvenile Court laws were recodified and

jurisdiction was extended over persons up to and including 18 years of age charged with any offense not punishable by life imprisonment or death. Proceedings of the court were made private. Parents of children born out of wedlock were made responsible for their care. A method of adoption procedure was set up. Males who have been married two or more times were required to prove that they were supporting their children when applying for license to remarry.

A defense measure set up advisory and administrative defense councils with broad powers and an office of civilian defense director and created a State defense fund of \$200,000. The Indiana Home Guard was created to serve during the absence of the Indiana National Guard. Negroes were admitted to the Home Guard, National Guard, and naval militia.

In the field of education were new laws providing for automatic renewal of teachers' contracts, for annual scientific hearing tests for pupils, and placing beginning grade and high school teachers on same pay scale with increases based on professional training.

Motor vehicle licenses and drivers' licenses were to be placed on sale January 1, with deadline March 1. The 1937 tire weight tax on commercial vehicles was repealed. Permissible length of trucks was increased from 33 to 36 feet. Carrier regulations were amended and increased amounts of motor vehicle funds were distributed to counties, cities, and towns.

The Sunday "blue" laws were amended to permit fishing, night baseball, and ice hockey games after one p.m. An appropriation of \$10,000 was made to protect Indiana from discriminatory freight rates. It was provided that employees of newspapers shall not be compelled to disclose any information which they may have obtained in the course of their employment. Good Friday was made a legal holiday.

Bibliography. *Indianapolis Sunday Star*, Mar 16, 1941, *Laws Passed and Appropriations Made*, compiled by the Indiana Legislative Bureau

Finances. Total tax collections in Indiana for the fiscal year ending in June, 1941, were \$103,577,000 (1940: \$100,514,000). Total sales taxes amounted to \$58,118,000, including motor fuel, \$27,123,000, general sales, \$25,873,000. Taxes on specific businesses ran to \$4,379,000, general and selective property (including the poll tax), \$3,500,000, unemployment compensation, \$23,153,000. Cost payments for the operation of general government totaled \$98,539,000 in 1939, the latest year available. (Revenues for the general government for that year were \$122,284,000.) Cost of operation per capita was \$28.97. Total gross debt outstanding in 1941 was \$8,904,000, as compared with \$4,906,000 in 1932.

Officers and Judiciary. The Governor is Henry F. Schricker (Dem.), inaugurated in January, 1941, for a four-year term; Lieutenant Governor, Charles M. Dawson; Secretary of State, James M. Tucker; Attorney General, George N. Beamer; State Treasurer, James M. Givens; State Auditor, Richard James. Chief Justice of the Indiana Supreme Court is N. Nathan Swaim; there are four associate members elected by popular vote for six-year terms.

INDIANS. See ANTHROPOLOGY. For population, see UNITED STATES. For OFFICE OF INDIAN AFFAIRS see YEAR BOOK for 1940.

INDO-CHINA. The southeastern peninsula of Asia, consisting of Burma, Federated Malay States,

French Indo-China, Straits Settlements, Thailand, and the Unfederated Malay States. See BRITISH MALAYA; BURMA; FRENCH INDO-CHINA; THAILAND. **INDUSTRIAL BUILDINGS AND PLANTS.** See ARCHITECTURE; ELECTRICAL INDUSTRIES, HEATING AND VENTILATING; ILLUMINATION; INSURANCE; MACHINE BUILDING; MOTOR VEHICLES; RUBBER.

INDUSTRIAL HEALTH AND SAFETY. See ACCIDENTS; INSURANCE; LABOR CONDITIONS and LABOR LEGISLATION under *Health and Safety*; MINES, BUREAU OF; PUBLIC HEALTH SERVICE.

INDUSTRIAL PHOTOGRAPHY. See PHOTOGRAPHY.

INDUSTRY. See BUSINESS REVIEW; FINANCIAL REVIEW; topics on the various branches of industry.

INFANTILE PARALYSIS. See PHILANTHROPY under *Warm Springs Foundation*.

INFANT MORTALITY. See CHILDREN'S BUREAU; VITAL STATISTICS.

INFLATION. See BANKS and BANKING, BUSINESS REVIEW; PRICE ADMINISTRATION, OFFICE OF; TAXATION; also, CANADA, CHINA, GERMANY, GREAT BRITAIN, GREECE, ITALY, MANCHOUKUO, under *History*.

INFLUENZA. See BIOLOGICAL CHEMISTRY under *Miscellaneous*; MEDICINE and SURGERY, PHYSICS under *Electron Microscope*; PUBLIC HEALTH SERVICE.

INFORMATION DIVISION. See NATIONAL DEFENSE AND WAR AGENCIES. Compare FACTS AND FIGURES, OFFICE OF.

ININI. See under FRENCH GULANA

INNER MONGOLIA. See CHINA; MONGOLIA.

INSECTS AND INSECT CONTROL. See ENTOMOLOGY, ECONOMIC; ZOOLOGY.

INSTALMENT SALES. See MARKETING.

INSURANCE. In common with all other major industries of the country insurance interests were profoundly affected by the war impact; company executives were compelled to alter radically many of their long established underwriting methods.

Upon the formal declaration of war against the Axis powers by the United States the insurance organizations of all types intensified their earlier efforts to support the Government in its defense program. The fire companies created the National Bureau for Industrial Protection, the purpose of which, as its title implies, is to safeguard industrial plants and warehouses against fire hazards, supplementing in such connection work first undertaken more than 18 months ago by engineers of the National Board of Fire Underwriters and by inspectors of rating bodies throughout the country. The insurance engineers cooperated closely with representatives of the Army and the Navy in recommending fire-protection safety devices, not alone for the cantonments, the shipbuilding, and the warehousing properties of the Government throughout continental United States, but in its outlying possessions as well. In like manner the casualty companies donated the services of their safety engineers to make careful surveys of all industrial plants engaged in defense work, with a view to suggesting means for reducing accidents to employees. The contribution of insurance interests along these lines was warmly commended by Government authorities.

Among other important happenings in relation to insurance during 1941, was the formation by the Reconstruction Finance Corporation (q.v.) of the War Insurance Corporation, with initial funds of \$100,000,000, designed to compensate for property losses suffered through bombardment or other acts of war. Just how the plan will operate, and whether a premium or special tax will be imposed to cover the possible cost of the indemnity, had not been determined at the close of the year.

When the country entered the war early in December, insurance companies were flooded with demands for bombardment coverage. For some days the business was written freely by two or three offices. The lines were promptly canceled, however, when notified by Lloyds of London of the immediate termination of all reinsurance treaties affecting such hazard; the individual underwriters of Great Britain advised at the same time discontinuance of bombardment indemnity in every other section of the world. The attitude of majority underwriters in the United States toward bombardment insurance was that the potential liability was so huge, that in the event of serious air attack by enemy powers upon any one of our great coastal centers, the combined insurance capital of the land would be insufficient to meet claims, and that the National Government alone was financially able to assume such responsibility. All standard fire insurance policies specifically set forth that "this company shall not be liable for loss caused directly or indirectly by invasion, insurrection, riot, civil war or commotion, or military or usurped power, or by order of any civil authority." Substantially the same provision appears in contracts of the casualty companies in so far as general liability, owners, landlords, and tenants covers are concerned, and is likewise incorporated in bonds of surety companies, save only that the carriers accept liability for securities lost in transit under any condition.

Policies of workmen's compensation insurance, however, have no such saving clause, a fact that is causing concern to executives these days. The Maritime Commission recently announced its willingness to assume vessel hull and cargo insurance upon American flag vessels unable to obtain full coverage from private marine writing companies. The capacity of the American Marine Insurance Syndicate, which embraces within its membership virtually all of the marine offices, is such that it has been able thus far to assume complete liability for all submitted lines, and is confident of its continued ability so to do, regardless of the number or value of the offerings.

The year was further notable for the broadening of policy contracts by virtually all divisions of insurance; especially was this true of the fire, casualty, and surety companies, each of whom increased the scope of the protection afforded assureds, the concessions in many instances being accompanied by rate reductions.

Unofficial figures on the result of 1941 activities indicate that the premium income for companies generally showed a considerable gain over that of the preceding year; the additional reserves required by the increased writings, however, will militate against any substantial increases in net surplus accounts. Little support, moreover, was given by the banking element of the business; interest returns upon the high-grade securities carried in company portfolios were extremely modest, and opportunities for further investing in stocks and bonds of proper standards seldom appeared. Appreciating the abnormal conditions that prevailed in the financial market, the National Association of Insurance Commissioners at their mid-winter meeting authorized use by the companies of December 1 security values in preparing statements for the year. Ordinarily December 31 market quotations are required. The commissioners also speculated at some length upon the possible exercise by the Government of more stringent control over insurance interests, usurping thereby to a degree functions now enjoyed by the different States. This fear was first voiced early in 1940, following a Congressional in-

vestigation of the life insurance industry, but the threat proved groundless then.

Fire Insurance. The premium income of the fire companies was estimated to be considerably in excess of that for 1940, which totaled \$1,733,959. This year's gain was traceable in part to expanded fire writings, and more especially to added sales of use and occupancy, inland marine, and ocean marine indemnity. There was also a considerable call for specialty forms of coverage to meet particular needs of individuals and corporations. The demand for use and occupancy protection was especially heavy, exceeding that of any previous period in the history of the business. Owners of machinery essential to the continuous operations of their plants, appreciating the delays and heavy costs to which they would be subjected in making replacements in the event of fire loss, were most anxious to secure adequate insurance coverage. In their consideration of applications for the indemnity, underwriters naturally gave preference to properties engaged in defense work, holding that in case of needed replacement of either machinery or raw stocks, or both, preference would be given by priority rulings.

Though the need for increasing rates upon use and occupancy lines was recognized by many company officials who advocated a modest advance in prevailing figures, majority opinion inclined to a time limit upon the policy, beyond which further coverage could be secured at added cost. Some companies flatly refused to write use and occupancy lines unless the straight fire business was given them at the same time, maintaining that if they were to assume the greater hazard under a use and occupancy contract, they should in all fairness receive the more attractive straight fire business as well.

The upturn in fire losses (see FIRE PROTECTION) strengthened the prediction of underwriters that the period of favorable losses enjoyed from 1935 to 1940 was at an end, and that henceforward a steady gain in the country's burning ratio might be counted upon. The most disastrous single fire in the history of the country, at the Fall River, Mass., plant of the Firestone Rubber and Latex Company, will probably cost the interested fire and marine companies approximately \$12,000,000.

Because of steadily mounting costs of building materials and of labor, and the difficulties and delays encountered in securing replacements of many types of machinery and of raw stocks, the satisfactory adjustment of losses, especially those reported under use and occupancy forms, has been extremely difficult; claim adjusters met problems never previously encountered.

Although the business of the fire companies expanded considerably at home throughout the past 12 months, their foreign writings fell off in large measure; practically disappearing in countries of the Far East and in continental Europe. Member companies of the American Foreign Insurance Association had a particularly large and profitable business in parts of the Philippine Islands, notably in Manila, all of which was doubtless wiped out by invading Japanese.

The outstanding happening in casualty insurance circles was the formula drafted by the War Department, and subsequently adopted by the Navy, under which employees engaged in defense work are to be furnished full indemnity for death or injuries, together with ample automobile injury and property damage protection; the business is to be written upon a "cost-plus-a-fixed fee" basis. This entirely new method of handling compensation risks has been sanctioned for use in virtually all States, so far as Government projects are concerned.

In view of the thousands of new employees engaged in war industries premiums of the compensation writing companies, based as they are upon annual payrolls, increased greatly during the year. While there was an increase in the number of compensable death and injury cases, attributed to the considerable number of new hands employed and the strain upon machinery in constant use, the result was not burdensome; it paralleled closely the experience in such connection of the casualty companies during World War I.

Automobile Insurance. Regarded for many years by managing underwriters as one of the most desirable divisions of their business, and with a long record of profit, the automobile line, both as to bodily injury and property damage features took a decided turn for the worse during the year; claims in excessive number for deaths and bodily injuries were filed with the casualty offices, while both types of institutions reported a decided increase in property damage losses. To such extent was this true that the fire companies raised their rates for the coverage effective on the first day of 1942, while the casualty companies arranged to advance their rates two weeks thereafter.

Decidedly the outstanding happening of the year in the automobile field was the enactment by New York Legislature of the motor vehicle safety responsibility law, to become operative Jan. 1, 1942. The measure, intended primarily to reduce road accident hazards, proposes further to insure payment of damages to innocent accident victims. All motorists are required to supply evidence of financial responsibility, either through holding the policy or bond of a duly licensed casualty or surety company, or through posting with the State of \$11,000 in cash or negotiable securities to guarantee payment of damages caused in an accident for which they were held at fault. Failing to comply with the requirements determined by the Act, the motorist will be denied the right to operate a car in New York; nor can he sell or transfer the car until his liability has been liquidated.

While certain shortcomings in the law exist and will likely be amended in 1942, the statute is deemed the best of its type yet proposed, and if in its operation the results prove anything like as satisfactory as the sponsors of the measure predict, the Act is sure to be adopted in other States.

Marine Insurance. First among the insurance companies to feel the effect of war conditions were the marine writing offices, upon whom calls for indemnity upon vessels and their extensive and valuable cargos started with the outbreak of hostilities in Europe in 1939. As the allied powers looked to this country very largely for foodstuffs as well as munitions of war, and as the number of modern steamships decreased through attacks by U-boats and bombers, many antiquated vessels were pressed into service to keep the British life line open. To reach their destinations the vessels were oftentimes compelled to make long and circuitous detours and to dispense with many of the ordinary navigation aids, thereby multiplying ordinary sea hazards. With constantly changing war conditions at sea, marine underwriters were forced to adjust their rates for indemnity at frequent intervals, seeking at all times, however, to avoid any semblance of overcharging. When the United States declared for an all-out war, marine insurance rates as between British and American flag vessels, which previously had favored the latter as a nonbelligerent, were unified.

Inland Marine Insurance. Indemnity upon the vast quantity of goods in transit, both by rail and heavy trucks, resulted in a heavy demand for inland ma-

rine coverage, the premiums of which for the year approximated \$60,000,000, an increase of nearly 10 per cent over those of 1940. There was a lively call for fine arts indemnity, while the personal property form of coverage attained increased sale, as issuance of the indemnity was sanctioned by various States that previously had opposed its writing within their borders.

Life Insurance. Decisions by several companies to shift to a lower interest assumption for reserves marked the first time that any American life insurance company has used a lower basis than three per cent. The move was due solely to the low level of interest returns on high-grade securities. Another result of this condition was a shift in sales emphasis still farther away from investment-type policies and toward those stressing the protection element.

The number of companies issuing new policies with provisions restricting coverage on war-caused deaths among the armed forces steadily increased during the year, until by January 1 companies representing a large majority of insurance in force were applying the war restriction to all new issues, regardless of the applicant's age or sex. This was done to protect existing policyholders from possible extraordinary losses not contemplated in fixing the premium. Total life insurance in force increased by about \$6,000,000,000 during the year, to exceed \$124,000,000,000 by the year-end. Total assets climbed to about \$32,550,000,000. Sales of new life insurance during 1941 totaled \$8,331,638,000; an increase of 10.7 per cent over 1940.

While several methods of taxing life insurance were considered in framing the 1941 revenue act, none was adopted in view of more urgent matters. It was anticipated that a life insurance tax proposal would be incorporated in the first 1942 tax measure. Although the Treasury had recommended a reduction in the exemption of life insurance death proceeds payable to a named beneficiary from \$40,000 to \$25,000, Congress left this unchanged.

See COLORADO under *Legislation*; CONSUMERS' COOPERATIVES, FEDERAL HOUSING ADMINISTRATION; FINANCIAL REVIEW under *New Financing*; VETERANS' ADMINISTRATION.

GEORGE A. WATSON.

INTELLIGENCE TESTS. See *PSYCHOLOGY*.

INTER-AMERICAN AFFAIRS, Office of the Coordinator of. See *COORDINATOR OF INTER-AMERICAN AFFAIRS*.

INTER-AMERICAN BANK. See *PAN AMERICANISM*.

INTER-AMERICAN DEVELOPMENT COMMISSION, SHIPPING COMMITTEE. See *COORDINATOR OF INTER-AMERICAN AFFAIRS*.

INTER-AMERICAN UNION OF THE CARIBBEAN. An organization with headquarters at Havana, Cuba, formed for the purpose of convening meetings "to further closer relations and to contribute toward the development of cultural as well as economic and tourist relations" among the nations of the Caribbean area. Delegates to the meetings consist of: (1) official representatives or observers of the governments of Colombia, Costa Rica, Cuba, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, the United States and Venezuela; (2) representatives of cultural, educational, scientific, professional, and economic institutions and organizations; and (3) individuals admitted to membership because of their interest and work in inter-American fields.

The third annual conference of the Union was held in Port-au-Prince, Haiti, during Apr. 22-29, 1941. The discussions were devoted mainly to non-political subjects bearing upon the mutual promo-

tion of culture, health, commerce and tourist travel among the participating countries. However the Mexican delegation of 19 members proposed the adoption of a set of statutes that would have endowed the Union with broad political and economic powers.

A heated debate was precipitated when Washington's delegate at the conference, the U.S. Minister to Haiti, announced that the United States opposed acceptance of the statutes on the ground that they would create an organization with functions overlapping those of the Pan American Union. This position was criticized by the representatives of Mexico, Nicaragua and Haiti. On the other hand, the Cuban and Colombian delegates and others present supported the stand taken by the United States. The conference finally voted to eliminate the phrase "Caribbean Inter-American Union" from the statutes and send them to the interested governments for study.

See PAN AMERICANISM; REGIONAL CONFERENCE OF THE RIO DE LA PLATA.

INTEREST RATES. See BANKS AND BANKING.

INTERIOR, U.S. Department of the. See separate articles on the following branches of the Department: BITUMINOUS COAL DIVISION; FISH AND WILDLIFE SERVICE; GEOLOGICAL SURVEY; MINES, BUREAU OF; NATIONAL PARK SERVICE; POWER, DIVISION OF. The Secretary of the Interior in 1941 was Harold L. Ickes.

INTERNAL REVENUE. See PUBLIC FINANCE.

INTERNATIONAL COOPERATION. See INTER-AMERICAN UNION OF THE CARIBBEAN; LEAGUE OF NATIONS; PAN AMERICAN UNION; PAN-AMERICANISM; REGIONAL CONFERENCE OF THE RIO DE LA PLATA; WORLD COURT.

INTERNATIONAL LABOR ORGANIZATION. A permanent diplomatic and administrative association of nations having in its membership more than 50 nations of the world, including the United States. Its objective is the improvement of labor conditions. Its machinery consists of an annual *Conference* of representatives of the member nations, and an *International Labor Office* controlled by a *Governing Body*, the latter consisting of 32 persons, 16 of whom represent the governments, 8 the employers, and 8 the workers, meeting quarterly.

The annual Conferences draw up draft conventions and recommendations affecting industrial conditions which are presented to the competent authorities in each member nation for ratification or adoption. Up to September, 1941, the Conference had adopted 67 Draft Conventions, and 882 ratifications had been registered. The International Labor Office, with its permanent seat at Geneva, Switzerland, acts as a secretariat for the annual Conference and as a research agency for the collection and dissemination of information bearing on the problems of labor and industry throughout the world.

The International Labor Organization maintains offices in various member countries to provide contact with social, labor, and industrial trends. At the present time there are branch offices in Washington, D.C., London, Shanghai, Paris, and New Delhi. In November, 1940, a new office was opened in Montreal, Canada, through the cooperation of the Canadian Government and on the invitation of McGill University to provide service for the member countries during the war.

From July, 1939, to September, 1941, member

countries registered 43 ratifications of ILO Conventions.

A citizen of the United States, Hon. John G. Winant, was elected Director of the International Labor Organization in 1938, taking office in January, 1939. Mr. Winant resigned in February, 1941, his place being taken in the ILO by Edward J. Phelan, Acting Director. Three other United States' citizens are at the present time on the Governing Body:—Hon. Carter Goodrich, United States Government representative, Chairman; Henry I. Harri-man and Robert J. Watt, elected by the employer and worker delegates respectively. Director of the Washington Office is Ethel M. Johnson, 734 Jackson Place, Washington, D.C.

In October-November 1941 the ILO held a meeting of the Governing Body and a Conference of member states in New York City. To this Conference came delegates from 33 member countries and observers from two countries. The Conference discussed the part to be played by the ILO in postwar reconstruction and the problem of effective cooperation between Governments, employers', and workers' organizations.

INTERSTATE COMMERCE COMMISSION. See DEFENSE TRANSPORTATION, OFFICE OF; RAILWAYS; SHIPPING.

INTRACOASTAL CANAL. See WATERWAYS, INLAND.

INVENTIONS. See NATIONAL INVENTORS COUNCIL, PATENT OFFICE, U.S.

INVESTIGATION, Criminal. See FEDERAL BUREAU OF INVESTIGATION.

INVESTIGATIONS. See UNITED STATES under *Congressional Investigations*.

IODINE. See BIOLOGICAL CHEMISTRY under *Miscellaneous*.

IOWA. A west north central State. Area: 56,280 sq. mi., including 294 sq. mi. of inland water. Population: (1940 census) 2,538,268. The urban population comprises 42.7 per cent of the total (U.S. average, 56.5 per cent); non-white population, 0.7 per cent (U.S. average, 10.2); elderly (65 years and over), 8.9 per cent. Iowa ranks 24th in area, 20th in population, and 26th in density, with 45.3 persons per square mile. The largest city and capital is Des Moines with 159,819 inhabitants. There are 99 counties and 21 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Jessie M. Parker, Superintendent of the Department of Public Instruction, there were 503,481 pupils enrolled in the public schools of Iowa during the school year 1939-40, 364,071 in elementary schools and 139,410 in secondary schools. Teachers numbered 25,151 and received an annual average salary of \$965. Total expenditures for the year were \$56,438,684. For higher education, see IOWA under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 9,620, of which 9,543 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 802,885; 691,257 were private and commercial automobiles, and 102,712 trucks and tractor trucks. Gross motor-fuel consumption was 572,720,000 gallons. Net motor-fuel tax receipts were \$14,855,000, the rate being three cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$12,987,000. See ROADS AND STREETS.

Railways of all classes extended 9,042 miles (Dec. 31, 1939) 3.85 per cent of the total mileage in the United States. Class I steam railways (7,688

miles) reported 12,578,202 tons of revenue freight originating in Iowa in 1940 and 15,851,420 tons terminating in Iowa. There are 35 airports and landing fields in the State (nine lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 476 civil aircraft in the State and 1,882 airline transport, commercial, and private pilots (1,659 private).

Agriculture. In the average annual gross value of farm products sold, traded, or consumed in the decade of 1929-39, Iowa led all other States with a total of \$561,846,688. Acreage harvested in principal crops in 1941 totaled 20,586,300, as compared with 20,611,000 acres in 1940. According to the latest census, there are 213,318 farms, valued at \$2,690,744,215, averaging 160.1 acres each. Farm population numbered 930,821 or 36.7 per cent of the total. Leading crops with production were: Corn, \$316,074,000, 464,814,000 bu.; oats, \$65,594,000, 177,280,000 bu.; hay, \$43,842,000, 5,721,000 tons, soybeans, \$24,082,000, 16,608,000 bu.; flaxseed, \$5,982,000, 3,438,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 2,670 manufacturing establishments in Iowa, employing 65,314 wage earners who received \$73,466,119 in wages for the year. The total value of products was \$718,531,801; value added by manufacture, \$244,795,279

Mineral Production. Leading mineral products in 1940 were: Cement, 4,597,781 bbl. valued at \$7,641,163 (4,717,295 bbl., \$7,771,503, in 1939), coal, 2,908,000 net tons (3,050,000 net tons valued at \$7,503,000 in 1939). Total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$25,483,936 or six-tenths per cent of the United States total

Trade. According to the 1940 census there were 5,802 wholesale establishments in Iowa, employing 24,120 persons, reporting net sales for 1939 of \$790,518,000 and annual pay roll of \$32,088,000. There were 39,024 retail stores with 87,684 employees, reporting sales of \$822,905,000 and pay roll of \$72,514,000. Service establishments numbered 13,756, employing 13,412 persons for \$10,854,000 per year, and reporting a business volume amounting to \$47,727,000. The leading business center of the State is Des Moines which reported wholesale sales of \$143,015,000, retail sales of \$82,272,000, and \$7,182,000 receipts for its service establishments. Sioux City reported sales of \$150,439,000 wholesale and \$39,306 retail; Davenport, \$49,062,000 and \$34,266,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Iowa was \$40,000,000. Under the Social Security program, financed by Federal funds matching State grants, 56,983 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$20.89 (U.S. average pension, \$21.08); 7,751 dependent children in 3,485 families received (without Federal aid) a total payment of \$66,878; and 1,527 blind persons received \$24.05 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 18,759 and received \$14.61 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 1,631 (\$108,000); NYA student work program, 5,793 (\$43,000); NYA out-of-school work program, 6,726 (\$130,000); WPA, 18,830 (\$1,018,000); regular Federal construction projects, 2,586 (\$226,000). The Farm Security Administration certified sub-

sistence payments totaling \$4,000 for the month to 146 cases.

Legislation. The General Assembly convenes in regular session on the second Monday of January in odd years. It is composed of 50 Senators (45 Republicans and 5 Democrats in 1941) and 108 Representatives (86 Republicans and 22 Democrats). The 49th General Assembly remained in session 91 days, passed 343 bills, and authorized expenditures of \$57,216,808 for the ensuing biennium (excluding the budgeting of primary road funds)—\$6,236,889 more than the preceding legislature had voted. No new taxes were imposed. The following summary of 1941 legislation by C. C. Clifton is reprinted from the *Des Moines Register*, Apr. 12, 1941:

Redistricting Iowa's nine congressional districts were condensed into eight for the 1942 elections by dividing the fourth district between a new second and third district. State senatorial districts were revised for the first time in 55 years by transferring one senator from eastern Iowa to northwest Iowa, effective in the 1944 elections. Lee county lost one of its two State representatives to Wapello county, effective in the 1944 election, because Wapello passed Lee in population in 1940.

Health Iowa became the 26th State making premarriage health examinations compulsory for both bride and groom. The law requires both parties applying for a marriage license to present a physician's certificate showing freedom from syphilis in a communicable stage. Use of sulphites to restore red color to hamburger was prohibited. County clerks were made registrars of vital statistics and empowered to appoint local registrars except in cities of 35,000 or more population, in which the local board of health appoints, usually, the city clerk.

National Defense Governor Wilson was authorized to establish a home guard to serve while the national guard is in federal service. An Iowa industrial and defense commission of 15 members was created and given \$50,000 to be used in attracting defense industries to the State. Leaves of absence for all officers and employees of the State and its subdivisions and 30 days' pay when inducted into federal service was legalized. Men in the military service were authorized to vote by absent ballot in the 1942 elections. Homestead tax credit rights and unemployment compensation benefits were preserved for soldiers.

Elections County conventions were prohibited from making nominations for which no candidate in the primary received a vote equal to 5 per cent of the governorship vote by his party. Date for holding county conventions after the primaries was changed from the fourth Saturday to the fourth Friday after the primaries. Method of counting absent voter ballots in precincts using voting machines was returned to counting them on the machines at the close of the polls. Proposals for four-year terms for constitutional State officers and county attorneys by constitutional amendment, and for four-year terms for other county officers were rejected.

Liquor and Beer No liquor legislation was considered by the legislature. The house liquor committee wouldn't consider a liquor by the drink bill. The senate committee didn't have one to consider. The only beer legislation was the single bill which the senate approved as its choice out of seven sent over by the house. The new bill, effective July 4, prohibits dancing in beer taverns unless permit is issued to a beer permit holder by a city or town council or county board of supervisors, and permits dancing where beer is sold only when there is a minimum of 500 square feet of floor space and a policeman or deputy sheriff is provided during dancing hours.

Schools A teacher tenure law making contracts continuing until terminated was enacted. The teacher's minimum wage was raised from \$50 to \$65 per month. Time of beginning of the term of county superintendents was changed from the first secular day in September to the first secular day in August. Tuition districts without high schools may pay for pupils in other districts was raised from \$9 to \$12 per month. Quarterly publication of school board proceedings was required of all consolidated and independent city or town school districts, except Des Moines. The legislature appropriated \$15,000 for a study of a revised code of school laws to be submitted in 1943. A bill for creation of a Statewide teacher pension system without contribution of State funds died. A bill for optional creation of county school units did not get out of committee.

Social Security The name of the Iowa unemployment compensation law was changed to Iowa employment security law. Employer's 3 per cent tax was limited to \$3,000 in wages paid any employee. National banks were authorized to pay taxes to the State instead of the federal government to make all bank employees eligible for benefits. The basis of payment of taxes and collection of benefits was changed from wages earned to wages actually paid in

a benefit year Old age pension funds were raised \$1,500,000 a year to \$8,500,000, which is matched by the federal government Use of white canes was limited to the blind, and motorists were required to stop for persons carrying them.

Failed to Pass. Many important measures fell by the wayside. Some were passed by one house but not the other. These included the bills to permit Iowa cities to participate in federal housing and slum clearance programs, grant aid to dependent children, require blood tests of drunken drivers, set up a teachers pension program, and provide penalties and clarify the motor vehicle law section on leaving the scene of an accident.

Finances. Total tax collections in Iowa for the fiscal year ending in June, 1941, were \$74,845,000 (1940: \$74,906,000). Total sales taxes amounted to \$38,817,000, including general sales, \$17,992,000, motor fuel, \$17,488,000. Taxes on specific businesses ran to \$3,684,000, general and selective property, \$3,909,000, unemployment compensation, \$7,713,000. The net income taxes were \$5,750,000. Cost payments for the operation of general government totaled \$76,826,000 in 1939, the latest year available. (Revenues for the general government for that year were \$91,617,000.) Cost of operation per capita was \$30.39. Total gross debt outstanding in 1941 was \$3,199,000, as compared with \$17,536 in 1932.

Officers and Judiciary. The Governor is George A. Wilson (Rep.), inaugurated in January, 1941, for his second two-year term, Lieutenant Governor, B. B. Hickenlooper; Secretary of State, Earl C. Miller; Attorney General, John M. Rankin; State Treasurer, W. C. C. Bagley; State Auditor, C. B. Akers; State Comptroller, C. Fred Porter. Chief Justice of the Iowa Supreme Court is Oscar Hale, there are eight associate members elected by popular vote for six-year terms.

See CONSUMERS' COOPERATIVES.

I.R.A. Irish Republican Army. See EIRE, IRELAND, NORTHERN, and GREAT BRITAIN under *History*.

IRAN (PERSIA). A kingdom of southwestern Asia. Capital, Tehran (Teheran); sovereign in 1941, Riza Shah Pahlevi, who was crowned Apr. 25, 1926.

Area and Population. Area, about 628,000 square miles; population, estimated at 15,000,000, including besides the dominant Iranians large minorities of Turks, Kurds, Leks, Baluchis, and Gypsies. There are about 3,000,000 nomads. Populations of the chief cities as officially estimated Mar. 1, 1940, were: Tehran and district, 540,087; Tabriz, 219,000; Meshed, 139,000; Shiraz, 119,000; Isfahan, 100,000; Hamadan, 99,000; Resht, 89,000; Kermanshah, 70,000; Kazvin, 60,000; Kerman, 59,000; Sultanabad, 55,000; Abadan, 40,000.

Defense. Service in the active army for two years is compulsory for youths of 21. They then serve in the reserves for 23 years. The strength of the active army in 1940 was reported at about 120,000 men. There was one mechanized brigade of anti-aircraft, tank, and infantry regiments, and an air force of five regiments with some 280 modern planes. In addition the armed police force comprised 7 independent mixed regiments and 15 mixed battalions. The navy had 2 sloops, 5 patrol vessels, and several smaller craft in the Persian Gulf, and a yacht and several motor patrol boats on the Caspian Sea.

Education and Religion. Despite rapid extension of educational facilities in recent years, the population remains largely illiterate. There were 4,939 schools with 273,680 pupils in 1937. Tehran has a university. Of some 900 Iranian students in foreign universities at the outbreak of the European War, most were withdrawn to Iran. The people are mainly Moslems of the Shiite sect; there are also about 50,000 Armenians, 40,000 Jews, 30,000 Nes-

torians, and some native Christians, Bahaists, and others.

Production. Agriculture and stock raising are the main occupations, but the oil industry is the chief source of government revenue. Production of the chief crops in 1937-38 was estimated as follows (in metric tons): Wheat, 1,942,300; barley, 706,900; rice, 382,100; beet sugar, 25,200 (in 1939-40); tobacco, 15,900; sesamum, 7,500; cotton, 32,900. Estimated cotton production for 1941 was 208,000 bales. The 1938 wool clip was about 18,100 metric tons. Dates, raisins, and other fruit are widely grown. The output of crude petroleum in 1940 was 78,592,000 bbl. (78,151,300 in 1939), giving Iran fourth rank among world producers. Copper mines at Baghcheh Bagh started production in 1940. Carpet making remains the leading industry. Cement, matches, cotton and woolen yarns and fabrics, refined sugar, silk textiles, and iron and steel are new industrial products fabricated with government backing. There is a large oil refinery at Abadan with a capacity of 109,390,000 bbl. annually.

Foreign Trade. Preliminary data for the year ended Mar. 20, 1941, showed commercial imports of 864,925,000 rials (612,164,000 in 1939-40) and commercial exports, excluding oil, of 925,381,000 rials (803,888,000 in 1939-40). Oil exports fell 22 per cent to 1,313,591,000 rials from 1,680,064,000 in 1939-40. Germany supplied 42.9 per cent of the commercial imports in 1940-41 (26.1 in 1939-40); Soviet Union, 9.7 (11.7); Netherlands, Indies, 9.2 (3); British India, 9.0 (10.6); United States, 8.4 (6.6); United Kingdom, 7.0 (7.7). Of the commercial exports, excluding oil, Germany took 47.9 per cent in 1940-41 (48.9 in 1939-40), United States, 13.4 (11.6); Soviet Union, 12.7 (0.4); British India, 6.2 (7.1). Petroleum products normally account for three-fourths of the value of all exports.

Finance. Budget estimates for the fiscal year ended Mar. 20, 1942, anticipated receipts of 3,613,768,718 rials and expenditures of 4,323,911,676 (3,094,394,000 and 3,210,973,000 rials, respectively, in 1940-41). Royalties from the Anglo-Iranian Oil Co., fixed in 1940 at a guaranteed minimum annual payment of £4,000,000, go into a reserve fund and are not included in the budget. However payments from the reserve fund of £2,000,000 to the War Ministry and £1,000,000 for railway construction were authorized during 1941-42. The recognized foreign debt outstanding May 15, 1940, totaled £951,706. The rial was pegged at 17.1133 rials to the U.S. dollar (1 rial = \$0.0585) on Dec. 21, 1939. The previous official fixed rate was 80.50 rials to the pound sterling.

Transportation. The Trans-Iranian Railway from Bandar Shahpur on the Persian Gulf to Bandar Shah on the Caspian Sea (866 miles) was completed Aug. 26, 1938. Under construction in 1941 were the lines Tehran-Tabriz, Tehran-Meshed, and Tehran-Yezd. The Tehran-Kazvin line was opened Mar. 8, 1940. Highways in 1940 aggregated 22,373 miles, of which 4,719 miles were of macadam or asphalt, and 10,207 miles of improved earth and gravel. An air line in 1941 linked Tehran, Kermanshah, and Baghdad. Shipping tonnage entering Persian Gulf ports in 1937-38 totaled 7,054,500 tons (5,163,036 tons British); Caspian ports, 497,098 tons.

Government. At the beginning of 1941 executive power was exercised by the Shah, acting through his Cabinet appointees. The parliament (Medjliss) of 136 members, elected for two years, sanctioned

measures proposed by the Shah and his Cabinet. Premier, Dr. Ahmed Matine-Daftary, appointed Oct. 26, 1939.

HISTORY

Anglo-Soviet Invasion. Iran was drawn unwillingly into the maelstrom of the World War during 1941. Parts of the kingdom were occupied by British and Soviet forces. The Shah was forced to abdicate, a more liberal regime was established under his son, and Iran became a virtual ally of both Britain and the Soviet Union in the struggle with the Axis.

The prelude to these events was the three-cornered struggle among Germany, the Soviet Union, and Great Britain to obtain Iran's collaboration and support, which gained considerable intensity during 1940 (see *YEAR BOOK* for 1940, p. 363). This struggle became more crucial in 1941 as the German armies advanced into the lower Balkans and Crete and launched their drive through southern Russia toward the oil fields of the Caucasus. Iran, with its valuable oil deposits and its strategic position separating the British forces in India and the Near East from each other and from the U.S.S.R., was considered a major objective of German strategy.

German activities in Iran seemed designed to bring about a coup that would place a pro-Axis government in power. Beginning in the spring, the British Government repeatedly called the attention of the Iranian Government to the danger arising from the constant infiltration of German "tourists" and "technicians" and the distribution by Axis agents and their native collaborators of arms, money, and inflammatory propaganda among discontented elements of the population. After the German attack upon Russia, the Soviet Government joined Britain in these representations. Meanwhile German agents in Iran were said to have encouraged the anti-British coup in Iraq in April. The Tehran authorities gave no open encouragement to Rashid Ali al-Gailani in his brief struggle with the British in May, but gave refuge to him and to the strongly anti-British Grand Mufti of Jerusalem when they were driven out of Baghdad.

At the end of June, a British-Soviet accord for the establishment of British and Soviet zones of influence in Iran was reported. Toward the middle of July the British and Soviet Government made parallel representations in Tehran, urging expulsion of Axis agents from Iran. A virtual Anglo-Soviet ultimatum to the same effect was delivered August 16, but Riza Shah Pahlevi again refused to order a general expulsion of Germans, who occupied key positions in Iranian factories, the communications system, and public works. He did agree to request the departure of a small number of Germans each month, but even this provoked threats of reprisals from Berlin.

The British and Russians ended this diplomatic jockeying for time by launching a joint invasion of Iran on the early morning of August 25. Supported by naval units in the Persian Gulf, British armies marched in from Iraq and Baluchistan while Soviet troops struck southward on both sides of the Caspian Sea. At the same time the British Minister and Soviet Ambassador in Tehran delivered notes to the Iranian Foreign Office asserting that their governments had no designs upon the independence or territorial integrity of Iran and that their action was directed solely against Axis attempts to seize control of the kingdom.

The resistance of the Iranian army was quickly overcome (see *WORLD WAR*). On September 1 it



Courtesy of The New York Times

ANGLO-SOVIET ZONES OF OCCUPATION IN IRAN

Under the armistice of Sept. 9, 1941, Iran agreed to Russian occupation of the area shown by vertical shading and to British control of districts shown by horizontal shading

was announced that British and Russian columns had met at Sinneh, in Western Iran, thus cutting off Iran from Turkey. Meanwhile on August 27 the Shah had accepted the resignation of the Cabinet headed by Ali Khan Mansur. A new Ministry formed by Ali Khan Furanghi ordered the cessation of hostilities (August 28). It accepted the mild armistice terms presented by Russia and Britain on August 30, but bowed reluctantly to stiffer requirements set forth in an Allied note of September 8. This provided for mass expulsion of Axis nationals and the closing of all Axis legations and consulates in Iran, occupation of strategic areas in the north and south by Soviet and British forces respectively (see accompanying map), and control of railways, airdromes, and other communication facilities in the rest of the country.

Riza Shah's Abdication. The invading forces halted their advance toward Tehran upon conclusion of this agreement. But they resumed it a week later when Riza Shah Pahlevi delayed the evacuation of Axis nationals and when public order was threatened by a spreading revolt among the tribes of southwestern Iran and by a rapidly rising wave of popular dissatisfaction with the Shah's autocratic regime. With British and Russian columns within a few miles of the capital, the Shah abdicated on September 16. His 21-year-old son, Mohammed Riza Pahlevi, succeeded to the throne. Before the Allied forces entered the suburbs of Tehran on September 17, the deposed Shah fled toward the Afghan border. On October 18, the British Government announced that he had just arrived at the island of Mauritius "where it was found desirable he should reside temporarily."

The New Regime. The new Shah managed to retain his tenuous hold upon the throne by adopting a pro-Allied policy, granting far-reaching concessions to the native demand for political reform, and taking steps to crush the revolt among the tribes in the southwest. Disorders among the Kurds, Armenians, and other minorities also were repressed. Axis nationals remaining in Iran were sum-

marily deported to Turkey. Diplomatic privileges of the Japanese and other pro-Axis legations in Tehran were curtailed. The young Shah on September 20 pledged "the closest cooperation" with Britain and the Soviet Union.

The day after Riza Shah Pahlevi's abdication, the Medjliss or parliament demanded the establishment of constitutional government, recognition of civil rights, elimination of corruption, reform of the national finances, release of political prisoners, and the restoration to the nation or to the rightful owners of the wealth and properties seized by the former Shah during his long and despotic regime. These demands were immediately granted by the new Shah. The Iranian Government announced September 18 that Mohammed had agreed to release political prisoners and deed his father's wealth to the nation. On September 20 the Shah formally proclaimed the establishment of constitutional rule, including the granting of political power to the Medjliss and Cabinet. On September 21 the Medjliss approved a new Cabinet headed by Ali Khan Furanghi but purged of seven of the former Ministers.

In these moves the young Shah was guided by Premier Furanghi, who in turn acted in collaboration with the British Minister to Tehran. However Mohammed, who had been educated in Switzerland, displayed a progressive and liberal attitude. In his first radio broadcast on October 25, he declared himself convinced that the democratic system of government was the best.

Treaty with Allies. A major task of Premier Ali Khan Furanghi's Government was the negotiation of a treaty with Britain and the Soviet stabilizing Iran's relations with the two occupationary powers. The treaty, signed in January, 1942, covered four main points according to the diplomatic correspondent of the *London Times*. These were: (1) An Anglo-Soviet pledge to guarantee Iran's territorial integrity and to provide military aid sufficient to fulfill this pledge. (2) An Allied promise to consult the Iranian Government on all military, political, and economic measures affecting domestic policy. (3) A pledge to withdraw all British and Russian troops from Iran as soon as the situation permitted. (4) An Anglo-Soviet promise of economic assistance to Iran.

Some friction between Soviet troops and Iranians was reported in October, leading the U.S. Minister in Tehran to intervene as mediator. However this friction was eliminated to a considerable extent by the withdrawal of Soviet and British troops from Tehran on October 18 and the subsequent weakening of Soviet forces in northern Iran to meet the German drive into the Caucasus. The German threat led to Anglo-Soviet preparations for the joint defense of Iran and to hasty Allied improvement of trans-Iranian transportation systems for the shipment of supplies from the Persian Gulf and India to Russia.

On December 27 Brig. Gen. Sir Godfrey Reynolds, director of transport in Iran, announced that British and American war supplies were flowing regularly by road and rail through Iran to the Russian front. Numerous engines and railway cars were shipped from Britain, Egypt, Australia, India, and the United States for use on the Trans-Iranian Railway. The ports of Bushire and Bandar Shahpur in Iran and Basra in Iraq were said to be operating at full capacity. At Bandar Shahpur a new jetty was under construction designed to double the harbor's capacity.

See GERMANY, GREAT BRITAIN, IRAQ, and UNION OF SOVIET SOCIALIST REPUBLICS, under *History*.

IRAQ (IRAK). An Arab kingdom occupying the basin of the Tigris and Euphrates Rivers in Mesopotamia. Capital, Baghdad. King, Feisal II, who succeeded to the throne Apr. 4, 1939.

Area and Population. Area, 116,600 square miles; population, estimated at 3,670,000 on Jan. 1, 1938. Chief cities, with estimated populations (1938): Baghdad, 340,000; Mosul, 98,000; Basra, the chief port, 62,000. Language, Arabic.

Education and Religion. Despite free primary education, illiteracy remains high. State school statistics for 1939-40: Infant, 34 schools, 5,174 pupils; primary, 669 schools, 85,792 pupils; intermediate, 42 schools, 11,697 pupils; secondary, 14 schools, 2,312 pupils; vocational and normal, 12 schools, 2,477 pupils. Private elementary schools numbered 72 with 17,495 pupils. There were also colleges of medicine, pharmacy, law and military science, and a higher normal school, all coeducational except the Military College. In 1935 there were 3,136,632 Moslems, 101,375 Christians, and 90,970 Jews.

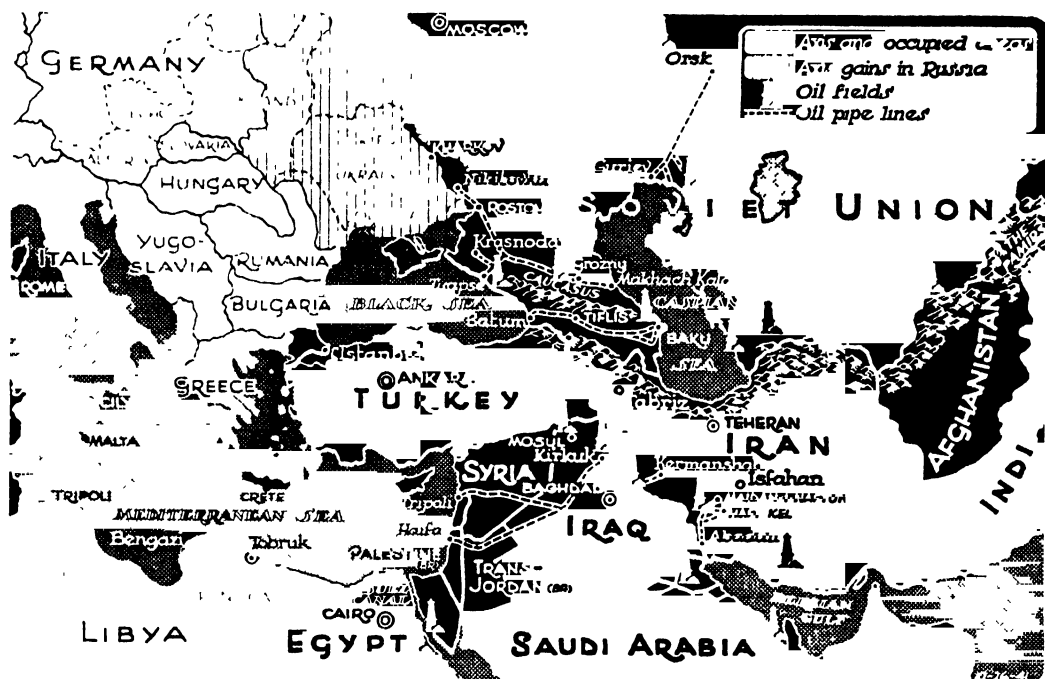
Defense. Compulsory military service for men from 19 to 25 years of age was introduced in 1936. The standing army and air force in 1938 was about 28,000 men, with a war strength of 40,000, and about 50 airplanes. A British military mission aids in training the army, which is mainly British-equipped. There was a police force of 10,382 officers and men on June 30, 1940.

Production. The principal occupations are agriculture, stock raising, and petroleum mining. Most of the petroleum output goes from Kirkuk, Iraq, by pipeline to Haifa, Palestine. The other pipeline to Tripoli, Syria, was closed in 1940. Petroleum production in 1940 was 25,725,000 bbl., of which about 23,000,000 bbl were exported. The chief crops are cotton (about 16,500 bales in 1939), dates, wheat (600,000 metric tons in 1938), barley (1,138,400 metric tons, 1938), rough rice (360,000 metric tons, 1938), tobacco (4,000 metric tons, 1938). Several large irrigation projects are expanding the area under cultivation. The 1938 wool clip was 8,300 metric tons.

Foreign Trade. Merchandise imports in 1940 were valued at 8,532,000 dinars (7,944,000 in 1939), while exports, exclusive of crude petroleum shipped by the Iraq Petroleum Co., totaled 3,528,000 dinars (3,900,000 in 1939). Most of the 23,000,000 bbl. of petroleum exported in 1940 went through the pipeline to Haifa, Palestine. Other leading exports were dates, barley, wheat, wool, hides and skins, and cotton. Sources of 1939 imports (in 1,000 dinars): United Kingdom, 1,917; Japan, 1,527; United States, 689; India, 586; Germany, 518. Chief 1939 exports markets (in 1,000 dinars): United Kingdom, 926; United States, 739; India, 421; Palestine and Trans-Jordan, 310; Japan, 169; Syria, 139.

Finance. For the fiscal year ended Mar. 31, 1941, ordinary budget estimates placed receipts at 6,426,500 dinars and expenditures at 6,666,780 dinars; for 1941-42, 8,462,768 and 8,273,226 dinars, respectively. Actual general budget receipts for 1939-40 were 5,963,712 dinars; expenditures, 6,235,270. The additional capital works account was: Receipts, 3,074,088 dinars; expenditures, 2,116,732 dinars. Capital works receipts include oil royalties. The public debt on Dec. 31, 1939, was unofficially estimated at 5,752,000 dinars. The dinar, equal to the pound sterling, averaged \$4.44 in 1939 and \$4.89 in 1938.

Transportation. Completion in 1940 of the Baiji-Mosul railway link gave Basra and Baghdad direct connections with Mosul, and with Europe via Iraq and Turkey. Excluding sidings, the railway mile-



Courtesy of The New York Times

STRATEGIC OBJECTIVES IN THE MIDDLE EAST

age in operation June 30, 1940, was 947. Railway receipts in 1939-40 were 752,546 dinars, expenditures 723,530. Highways of all description totaled 6,543 miles in 1940. Under construction in 1941 was the Baghdad-Haifa (Palestine) all-weather highway, expected to reduce motor travel time between Baghdad and Cairo to two days. The Iraq section was being built by British engineer officers at the expense of the British Government. The Imperial Airways, Royal Dutch Airlines, and Iranian State Air Lines continued to maintain services into or through Iraq during 1941, except during the period of hostilities. The port of Basra on the Persian Gulf handled greatly increased trade as a result of shipping difficulties in the Mediterranean.

Government. Following conclusion of an Anglo-Iraqi alliance on June 30, 1930, the League of Nations mandate for Iraq held by Great Britain was abolished and Iraq was admitted into the League as an independent kingdom on Oct. 3, 1932. The constitution of Mar. 21, 1925, made Iraq a constitutional hereditary monarchy with a parliamentary form of government. There is a Senate of 20 members nominated by the King for eight years and a Chamber of 115 elected Deputies. There are no stable political parties. Faisal II, born May 2, 1935, the grandson of Faisal I, inherited the throne Apr. 4, 1939, when his father, Ghazi I, was killed in an automobile accident. Emir Abdul Ilah, uncle of the boy King, was elected Regent by Parliament.

HISTORY

Iraq was drawn into the vortex of the expanding European conflict during 1941 when the German campaign for the conquest of the Near East and the Suez Canal, abetted by Nazi intrigues in Iraq, spurred ultra-nationalist, anti-British elements at Baghdad into an effort to repudiate the Anglo-Iraqi alliance and throw off the last vestiges of

British control. This attempt ended in failure.

New Government Formed. The struggle for power between pro-British and anti-British Iraqi leaders, reflected in growing governmental instability since the death of King Faisal I in 1933, led to another Cabinet overturn on Jan. 31, 1941. The ultra-nationalist Rashid Ali Al-Gailani, who had replaced the pro-British Gen. Nuri es-Said as Premier on Mar. 31, 1940 (see YEAR BOOK for 1940, p. 364), was forced out when Parliament met and denied him a vote of confidence. Although Rashid Ali had reaffirmed the Anglo-Iraqi treaty of alliance, he refused the collaboration that the British requested under the treaty. Instead he supported the ultra-nationalist Iraqi program of making the kingdom the nucleus of an independent Arab federation including French-mandated Syria and British-mandated Palestine and Trans-Jordan. As a leader of the Sunni Moslem religious sect, Rashid Ali was extremely influential among millions of Sunnis in Iraq, Iran, and India. He had the support of the violently anti-British Moslem Grand Mufti of Palestine, Haj Mohammed Amin El Husseini, who had taken refuge in Baghdad following his exile from Jerusalem. He also was said to have received liberal German financial and propaganda support for his Arab nationalist program.

Upon the resignation of Rashid Ali's Cabinet, precipitated by the withdrawal of several pro-British members, the Regent called upon one of the latter, Gen. Taha el-Hashimi, to form a new Ministry (Feb. 1, 1941). General el-Hashimi's new government included Gen. Nuri es-Said as Foreign Minister and other staunchly pro-British members. The German military occupation of Bulgaria on March 1 was followed by a conference in Cairo on March 6 between Foreign Minister Nuri es-Said and the British Foreign Secretary, Anthony Eden. Eden asked the Iraq Government's consent to the application of Clause IV of the Anglo-Iraqi alliance.

This bound Iraq to place its territory and means of transportation and communication at Britain's disposal in the event of war or the threat of war.

The Coup d'État. Opposition of the Iraq army leaders to this request was said to have precipitated the anti-British coup d'état of April 4 in Baghdad. Followers of Rashid Ali Al-Gailani surrounded the Regent's Palace, causing him to flee to Basra. At the same time officers of the Baghdad garrison seized Premier Taha el-Hashimi and forced him to submit his written resignation. Parliament was then convened and induced to elect a new Regent, Sherif Sharaf ad Din. The latter accepted Premier el-Hashimi's resignation and asked Rashid Ali Al-Gailani to form a new Government.

In addressing Parliament, Rashid Ali declared that his Government would respect the Anglo-Iraq treaty and other international engagements. However the composition of his Cabinet offered little prospect that this pledge would be kept. Accordingly the British supported Regent Abdul Ilah in holding that the new regime was unconstitutional. The attitude of officers of the Iraqi garrison at Basra forced Abdul Ilah to take refuge at Amman, Trans-Jordan. However political and military leaders belonging to the pro-British faction in Iraq continued to withhold their support from the new regime.

British Intervention. Regarding the turn of affairs in Iraq as part of the German campaign for control of the Iraq oil fields and all of the Near East, the British on April 17 landed a strong force from India at Basra. It was officially announced that this action was taken under the Anglo-Iraq treaty for the purpose of opening up lines of communication through Iraq. The Baghdad Government voiced no objection to this *fait accompli* until a second contingent of British-Indian troops arrived at Basra near the end of April. Premier Rashid Ali Al-Gailani then declared that the arrival of the second contingent while the first was still in Iraq constituted a violation of the Anglo-Iraqi treaty. He mobilized the army, occupied the Mosul oil fields, and demanded the withdrawal of the recently arrived British troops and the cessation of other British troop movements and plane flights. The British rejected these demands.

Hostilities broke out on May 2 when Iraq forces attacked the British-held airdrome at Habbaniyah (Habbania) on the Euphrates River 65 miles west of Baghdad. The same day Rashid Ali appealed to Germany for help, which was promised. On May 5 the Baghdad Government agreed to renew diplomatic relations with the Reich, severed upon the outbreak of the European War.

Declining an offer of mediation from Turkey, the British rushed air and land reinforcements to Iraq from India, Palestine, and Egypt. The Royal Air Force soon dominated the small Iraqi air force, and held in check the relatively small number of German and Italian planes that came to Rashid Ali's aid in the middle of May. British columns advanced upon Baghdad from Basra, from Trans-Jordan, and the airport at Habbaniyah. Although delayed by floods along the Euphrates River, they entered the capital on May 30. An armistice was concluded with the defeated Iraqi forces on May 31 under which fighting ceased June 1. On June 4 British troops, landed by plane, occupied Mosul, from which German air forces had withdrawn shortly before.

Flight of Baghdad Government. The collapse of Rashid Ali's regime was brought about partly through military reverses and partly through in-

ternal disintegration. The Shah of Iran and King Ibn Saud of Saudi Arabia both rejected Rashid Ali's appeals for assistance against the British. The proclamation of a holy war by the exiled Grand Mufti of Palestine was likewise a failure. The aid supplied by the Axis powers proved insufficient and the terms on which it was offered reportedly contributed to the collapse of Rashid Ali's Cabinet. British sources asserted that the Germans demanded control of the Iraq oil fields, airdromes, and the Baghdad Railway for the duration of the European War. Members of Rashid Ali's Cabinet were said to have balked at this, although the Premier was ready to sign such an accord.

Rashid Ali won recognition of his Government from the Axis powers and their satellites. He likewise concluded an agreement with the Soviet Union on May 16 for the establishment of diplomatic, trade, and consular relations. But Moscow rejected Rashid Ali's proposal that it should at the same time publicly declare itself in favor of the independence of the Arabian countries, including Iraq. No tangible aid was forthcoming from the U.S.S.R., while the United States and other governments friendly to Britain refused to extend recognition to the Baghdad Government.

About May 24 the deposed Regent, Abdul Ilah, reentered Iraq under the protection of British and loyal Iraqi troops and began to rally tribes hostile to the Baghdad Government. With British columns approaching the capital, Rashid Ali, the leading members of his Government, the Grand Mufti of Palestine, and the German and Italian Ministers, fled across the border into Iran on May 30. The same day the Mayor of Baghdad asked for armistice terms. The British guaranteed Iraq's unity and independence, agreed to the return of Iraqi troops that had fought under Rashid Ali to their peacetime stations, and turned over captured partisans of Rashid Ali to the Regent Abdul Ilah. British prisoners were released, Germans and Italians captured with Iraqi forces were interned, and the British obtained control of all vital communication and transportation facilities, as provided under the Anglo-Iraqi treaty of alliance. British forces were authorized to enter Iraq freely and to build strategic roads for its defense. The change of control in Baghdad was accompanied by an outbreak of rioting and looting by Arab irregulars, but some 500 Britons and other foreigners who had been sheltered throughout the hostilities in the British Embassy and American Legation emerged safely from the month's ordeal.

Pro-British Cabinet Named. Regent Abdul Ilah entered Baghdad on June 1 and called on former Premier Jamil al-Midfai to form a new Government. The boy King, who had been reported kidnapped, was found unharmed. A Cabinet of strongly pro-British Ministers was announced June 3, following a new outbreak of rioting by supporters of Rashid Ali, which led to the declaration of martial law in the capital. On June 9 it was announced that the new regime had broken off diplomatic relations with Italy and ordered Italian civilians to leave Iraq within 24 hours. Shortly afterward the Iraqi Government made public a message from Foreign Secretary Eden declaring Britain's intention to respect the integrity and independence of the country and expressing readiness to cooperate in measures for its defense and economic development.

Scanty news reports from Iraq thereafter indicated a continuance of unrest. An uprising of Kurds in Northern Iraq was reported from Turkey in September. The Iraq Government proceeded to

purge the army, the police, and the civil service of German sympathizers. Premier Jamil al-Midfai resigned unexpectedly early in October and Gen. Nuri es-Said, who was serving as Minister to Egypt, was hurriedly called home to take over the Premiership. At the opening of the Iraqi Parliament early in November, the Regent emphasized the need for military and other reforms. At the same time, the Government indicated that diplomatic representatives of Vichy France and Japan were not welcome because of their aid to Rashid Ali. Fifty Axis propagandists and agents were subsequently interned by Premier Nuri es-Said. Trade relations with Japan were severed in mid-October.

The assassination in Baghdad on November 9 of Fakhri Bey Nashashibi, a leading pro-British Palestine Arab, revealed that terrorist adherents of the Grand Mufti were still active in Iraq. Meanwhile both the Grand Mufti and Rashid Ali Al-Gailani had escaped from Iran to Turkey upon the Anglo-Soviet occupation of Iran. From Turkey they made their way to Berlin, where both joined in pro-Axis and anti-British propaganda broadcasts to the Arabs of the Middle East.

See ARABIA, GERMANY, GREAT BRITAIN, and SYRIA, under *History*, WORLD WAR.

IRELAND (EIRE). See EIRE (IRELAND).

IRELAND, NORTHERN. An area, largely coextensive with the region of Ulster, in the north of Ireland, consisting of six counties and two parliamentary boroughs, it is integrally united with Great Britain. Capital, Belfast.

Area and Population. The area is 5,237 square miles and the estimated population on June 30, 1939, was 1,290,000 (1,279,753 at the Feb. 28, 1937, census). Living births numbered 25,254 (19.5 per 1,000) in 1939, deaths, 17,549 (13.6 per 1,000), marriages, 9,185. The population of Belfast (1937) was 438,112, that of Londonderry, 47,804. The census of 1937 showed 428,290 Roman Catholics, 390,931 Presbyterians, 345,474 Episcopalians, 55,135 Methodists, and 59,915 of other professions. Public elementary schools in 1939-40 numbered 1,691 with 191,734 pupils; secondary schools, 75, with 14,557 pupils, technical schools and centers, 130, with 23,147 students. Queen's University in Belfast had 1,555 students.

Production. Agriculture is the chief industry; the gross value of output was £16,500,000 in 1938. Livestock, eggs, milk, bacon, and potatoes are exported to Great Britain. Livestock on Jan. 1, 1939, included 700,564 cattle, 551,262 sheep, 565,726 swine, 6,038,000 poultry. The area under crops increased from 919,700 acres in 1938 to double that number in 1941. The flax acreage alone was expanded from 20,000 to 100,000 acres to support the linen industry, which before the war depended upon imported flax. About 1,940 persons were employed in coal mines and quarries in 1938. Linen and ships, the chief manufactures, normally engage 70,000 and 15,000 workers respectively. After the outbreak of war the whole of industry was geared to war production, including ships, airplanes, tanks, shells, guns, gun mountings, rope, and other equipment.

Finance. After deducting the cost of "Reserved" and Imperial Services, actual revenues for the fiscal year ended Mar. 31, 1940, were £13,635,081; expenditures, £13,515,463. Estimates for 1940-41: Revenues, £13,840,000; expenditures, £13,700,000.

Transportation. There were in 1940 about 754 miles of main-line railways, 180 miles of canals,

and 13,186 miles of roads. Shipping lines provide frequent service from Belfast and Londonderry to British ports.

Government. Although an integral part of the United Kingdom and represented by 13 members in the British House of Commons, Northern Ireland exercises a degree of local autonomy, through a Parliament of its own and a cabinet responsible thereto. The Senate of this Parliament has 24 elected and 2 ex-officio members; the House of Commons has 52 members, all elected. The composition of the House of Commons elected Feb. 9, 1938, was: Unionists, 39; Nationalists, 8; Independent Unionists, 2; Labor, 2; Independents, 1. The chief permanent officer is a Governor (since 1922, the Duke of Abercorn). The head of the cabinet is a Prime Minister (John Millar Andrews since Nov. 26, 1940).

History. The political and religious conflict between the Protestant Unionist majority and the Catholic Nationalist minority over war policy and Northern Ireland's future relationship to Eire continued to dominate events in Ulster during 1941. The executive council of the strongly pro-British Unionist party on January 5 approved a statement attacking Eire's neutrality as "deliberately prejudicing Britain's prospects of success in a struggle which means as much for one country as the other."

Belfast and its shipyards and factories suffered from two severe German air attacks on the nights of April 15 and May 4. There were numerous civilian casualties and extensive damages from fires and demolition bombs. The fires set during the April 15 raid were so serious that Dublin in neutral Eire sent fire crews and equipment to aid the Belfast firemen. As a result of this raid, Belfast and eight other districts of Northern Ireland were declared defense areas on April 21 by order of the Ulster Minister of Public Security.

Apparently in the belief that these German raids had changed sentiment among the Catholic Nationalist minority regarding all-out participation in the war, the Ulster Government in mid-May was reported to have asked Prime Minister Churchill to extend conscription to Northern Ireland. Announcement of this plan in London on May 20 provoked a storm of protest in both Ulster and Southern Ireland. There were anti-conscription demonstrations throughout Northern Ireland on May 25 after Joseph Cardinal MacRory, Roman Catholic primate of all Ireland, issued a letter of protest. A considerable number of Ulster Unionists also opposed the conscription measure. After Prime Minister Churchill on May 27 announced that conscription would not be applied in Northern Ireland for the time being, the Ulster Prime Minister denounced the "unwarrantable interference" of Prime Minister de Valera and the Dublin Parliament in the controversy. See EIRE under *History*.

Ulster authorities continued their efforts to crush the subversive activities of the illegal Irish Republican Army. A suspected I.R.A. arms cache was discovered in a Belfast factory and four men arrested on March 16. It was revealed July 11 that Cahir Healy, Nationalist member of the Northern Ireland Parliament, had been arrested under the defense regulations on order of the British Home Security Minister, Herbert Morrison. With the cordial approval of the Northern Ireland Government, about 1,000 American construction workers arrived in Ulster during the year to work on new defense installations.

IRON AND STEEL. Out of the chaos of strikes, shortages, priorities, and war demands, the steel industry

emerged at the end of 1941 with a peak ingot production of 82,850,000 tons, an approximate 23 per cent increase over the 1940 output of 66,982,686 tons, and 63 per cent more than World War I's top mark of 50,467,880 tons in 1917. Finished steel production in 1941 was 60,000,000 tons; pig iron production was 55,748,000 tons. The steel industry operated at 98 per cent capacity, Jan.-June, 1941; 97 per cent capacity, July-Oct. and 98 per cent again in November.

Expansion during 1941 can be measured by the fact that on January 1 ingot capacity was 84,152,000 tons, on June 30, 86,148,700 tons, on December 31, 88,000,000 tons. The goal for the end of 1942 was 94,000,000 tons, including alloy steel for airplanes, tanks, and tools; ordinary steel for boilers, ships, freight cars; armor plate for aircraft, tanks, battleships, gun mounts, and helmets, and also Bessemer steel. Electric furnace capacity in 1941 increased 40 per cent. Pig iron capacity Jan. 1, 1941, was 57,000,000 tons, on June 30, 57,937,000 tons, by December 31, 59,437,000 tons. Further expansion to the 63,500,000 ton mark is expected by the end of 1942. This much expansion of pig iron capacity is planned with a view to replacing shortages in steel scrap.

The whole speed-up and expansion in the iron and steel industry was an effort on the part of the government and the producers to cope with the climbing war needs of the United States and the allied nations dependent on the United States for armaments. Billions of dollars were advanced by the Federal government through the RFC for the construction of new plants and the enlargement of existing steel mills. The American Iron and Steel Institute reported that the United States could put out 12½ tons of steel to Japan's one; and that the combined ingot capacity of the United States, the British Empire, and the U.S.S.R. was more than double that of the Axis nations: 130,000,000 tons to their 60,600,000.

The scrap shortage became acute in the fall of 1941 and was the one grave aspect of the 1942 steel expansion program. Total consumption of scrap in 1941 was about 53,000,000 tons compared with 41,000,000 tons in 1940. The automobile industry consumed 9,501,300 tons of steel. The ban on the production of passenger automobiles in 1942 was designed to release flat rolled and alloy steel for armament uses. This will not relieve the scrap shortage, however, since the impossibility of replacing them will obviate the scrapping of many an old family car. The only solution of the problem is to pick the nation clean of scrap down to its old razor

blades and hairpins, and to produce enough pig iron to take the place of scrap. The plan is to have enough new blast furnace capacity by 1943 to meet the demands of the scheduled 94,000,000-ton steel ingot program.

The 1941 fixed price on steel scrap was \$19.17 per ton; pig iron, \$23.61; the average price on steel ingots was \$97.30. Few changes are expected for the duration of the war.

See BUSINESS REVIEW; CHROMIUM; ELECTRICAL INDUSTRIES under Steel; MOLYBDENUM; PRODUCTION MANAGEMENT, OFFICE OF; SUPPLY PRIORITIES AND ALLOCATIONS BOARD.

IRON ORE. Iron ore production in the United States in 1941 broke the record with a total output estimated by the U.S. Bureau of Mines at 92,499,000 gross tons. This was a 26 per cent increase over 1940 production and a 17 per cent increase over the 1917 total, which had been the highest hitherto. The year's average price was \$2.49 per gross ton, 2¢ less than the 1940 average. Year-end stocks at the mines decreased 5 per cent from 1940 with 3,451,000 gross tons. The Lake Superior district produced 79,130,000 gross tons of iron ore in 1941, about 86 per cent of all iron ore shipped. Shipments amounted to 79,315,000 tons and were valued at \$201,181,000, a 24 per cent increase over 1940. Year-end iron ore stocks in this district were 4 per cent less than in 1940: 3,325,000 tons.

There were 1,707,811 gross tons of iron ore imported January-September, 1941, valued at \$3,917,452 compared with a total of 2,479,326 tons valued at \$6,204,641 in 1940. Three fourths of the 1941 imports were received from Chile. Exports for the same period were 1,347,641 tons at \$4,362,806 compared with 1,386,304 tons at \$4,624,555 in 1940.

The U.S. Bureau of Mines estimates appear in the accompanying table. For production index, see BUSINESS REVIEW under Minerals. See TRANSPORTATION DIVISION.

IRRIGATION. See AQUEDUCTS, DAMS; TUNNELS.

ISLE OF MAN. See GREAT BRITAIN under Area and Population.

ISOLATIONISTS. See UNITED STATES under Foreign Affairs. Also ARGENTINA, CANADA, CHILE, COLOMBIA, EIRE, SOUTH AFRICA, SPAIN, SWEDEN, and URUGUAY, under History; FASCISM.

ITALIAN AEGEAN ISLANDS. The islands in the Aegean, near Turkey in Asia, belonging to Italy. They comprise Rhodes, Castelrosso, and the Dodecanese

IRON ORE MINED AND SHIPPED IN THE UNITED STATES, 1940-41

	Ore mined (Gross tons)		Ore shipped			
	1940	1941*	Gross tons	Value	Gross tons	Value
Lake Superior:						
Michigan	12,472,448	14,813,000	13,751,970	\$40,474,051	15,289,000	\$43,220,000
Minnesota	47,736,810	62,886,000	47,904,137	118,947,968	62,543,000	153,970,000
Wisconsin	1,262,065	1,431,000	1,227,840	3,290,389	1,483,000	3,991,000
	61,471,323	79,130,000	62,883,947	162,713,308	79,315,000	201,181,000
Southeastern States						
Alabama	7,316,127	7,870,000	7,330,412	12,606,369	7,896,000	14,663,000
Georgia	101,286		100,342	182,613		
Mississippi						
Tennessee	23,237	81,000	23,088	63,750	81,000	148,000
Virginia						
	7,440,650	7,951,000	7,453,842	12,852,732	7,977,000	14,811,000
Northeastern States						
New Jersey	659,425	651,000	693,998	3,328,467	667,000	3,445,000
New York						
Pennsylvania	2,900,499	3,324,000	2,942,948	8,172,955	3,296,000	8,642,000
	3,559,924	3,975,000	3,636,946	11,501,422	3,963,000	12,087,000
Western States	1,224,002	1,443,000	1,223,349	2,019,337	1,429,000	2,514,000
Grand total	73,695,899	92,499,000	75,198,084	189,086,799	92,684,000	230,593,000

* Estimated



International News Photos



Indian riflemen of the British Imperial forces guarding the vital oil pipelines in Iran, taken over following simultaneous British-Soviet invasion. See **IRAN**

THE FIGHT FOR OIL IN THE NEAR EAST

Part of the British armored car unit that fought at Habbaniyah airdrome in Iraq, when British forces ousted pro-German Premier Rashid Ali. See **IRAQ**



Press Association

ITALIAN SURRENDER The Duke of Aosta, Viceroy of Italian East Africa (second from the left), with British officers at Amba Alagi on May 20, when he surrendered with five other generals and 19,000 men.

ETHIOPIAN RETURN: Emperor Haile Selassie on a 200-mile trek, last stage of his journey back to the capital (Addis Ababa) from which he was driven by Italian conquest in May, 1936.

group of 12 islands. Total area, 1,035 square miles; total population (1936), 140,848 (85 per cent native, 12 per cent Italian, and 3 per cent foreign). Chief towns: Rhodes, the capital, 27,466 inhabitants; Kalymnos, 15,247. Grapes, olives, tobacco, oranges, and vegetables are the main agricultural products. Livestock (1938): 62,735 goats, 51,907 sheep, 6,460 horses, donkeys, and mules, 4,710 oxen, and 2,656 swine. The important industries are sponge fishing, and the manufacture of oriental carpets, wine, olive oil, and artistic pottery and tiles. Trade (1938): 157,421,000 lire for imports and 21,851,000 lire for exports (lira averaged \$0.0526 for 1938; \$0.0520, 1939). Budget (1934-35): 48,000,000 lire. Roads (1940): 391 miles. Governor and Commander-in-Chief, Admiral Inigo Campione (appointed Aug. 5, 1941).

History. The island of Castellrosso, which is over 100 miles east of the Dodecanese group and less than 3 miles from the mainland which is Turkish territory, was occupied by British military and naval forces on Feb. 25, 1941. Three days later these forces withdrew after having accomplished their mission. The Italians claimed to have recaptured some prisoners when they reoccupied the island. See WORLD WAR.

ITALIAN EAST AFRICA. An Italian colony in East Africa established by the decree of June 1, 1936, which merged the old Italian colonies of Eritrea (area, 45,754 sq. mi.; pop., about 650,000 in 1936) and Italian Somaliland (area, 194,000 sq. mi.; pop., 1,010,815 in 1931) with the newly conquered Empire of Ethiopia (area, about 347,500 sq. mi.; pop., estimated at 10,000,000 to 12,000,000). Capital, Addis Ababa.

Italian East Africa was conquered by British Empire, Allied, and native Ethiopian troops during 1941. The Emperor Haile Selassie of Ethiopia, who was forced into exile by the Italian invaders on May 2, 1936, was restored to his throne in Addis Ababa on May 5, 1941. The political boundaries of Ethiopia prior to the Italian conquest were then restored, while Eritrea and Italian Somaliland passed under direct British control. See *History*.

The area and population of Italian East Africa by provinces, according to official Italian estimates of May, 1939, are shown in the accompanying table.

ITALIAN EAST AFRICA· AREA AND POPULATION

Province (Capital)	Sq. Miles	Population
Eritrea* (Asmara)	89,274	1,500,000
Amhara (Gondar)	76,235	2,000,000
Shoa (Addis Ababa)	24,125	1,850,000
Galla and Sidamo (Jumma)	124,369	4,000,000
Harar (Harar)	79,844	1,600,000
Somaliland* (Mogadiscio)	270,972	1,150,000
Totals	664,819	12,100,000

* Eritrea and Somaliland were not co-terminous with the former colonies; they included parts of Ethiopia.

Estimated populations of the chief cities: Addis Ababa, 150,000; Harar, 50,000; Dire Dawa, 30,000; Asmara, 23,000; Mogadiscio, 21,000; Massaua, 15,000; Gondar, 6,000; Dessye, 5,000. The number of permanent Italian residents was 200,000, according to census results announced in July, 1940. The native population includes some 2,000,000 Amharas, the former rulers of Ethiopia, who are Coptic Christians; more than 3,000,000 Galls, who are part Christian, part Mohammedan, and part pagan; and the Danakil, Somalis, and numerous other tribes, mostly Mohammedan or pagan. The chief languages are Amharic, Arabic, and Tigrenish.

Religion and Education. The subordination of the Ethiopian Copts to the Egyptian Coptic Church

was ended on Dec. 1, 1937, by the Italian Viceroy at Addis Ababa, who assumed power to appoint the Abuna (patriarch) and bishops for all Italian East Africa. With the collapse of Italian rule in 1941, however, the former relationship between the Ethiopian and Egyptian churches was restored. Roman Catholic missionary activities in Italian East Africa increased during 1936-40 while most of the Protestant missions were forced to suspend activities.

There were in 1940 both government and missionary schools for native elementary education and two institutes for young native Christians and Moslems. There were also a number of primary schools, 5 technical institutes and 4 classical high schools for Italian pupils. The Italian schools in Ethiopia were dissolved following the collapse of Italian rule in 1941.

Production. Stock raising and primitive agriculture are the chief occupations. Cultivated and wild coffee (exports, 13,000 metric tons in 1937-38), cotton, sugar, flax, bananas, dates, grapes, cereals, tobacco, fruits, and vegetables are grown in small quantities. Agricultural produce was grown for export on some foreign plantations using native labor. Salt exports in 1939 were about 250,000 tons. Gold, platinum, iron, and potash are produced in commercial quantities. A 1939 census showed 4,007 industrial firms in Italian East Africa with an invested capital of about 2,700,000,000 lire, and 4,785 commercial firms (capital, 1,100,000,000 lire), most of them in Eritrea.

Trade and Finance. Imports in 1938 totaled 2,447,057,000 lire (2,062,038,000 from Italy) and exports were 191,877,000 lire (114,845,000 to Italy). The lire exchanged at \$0.0526 in 1938. Revenue and expenditure for the fiscal year ended June 30, 1940, were estimated to balance at 2,183,000,000 lire, excluding expenditures from the special fund of 12,000,000,000 lire allocated by the Italian Government in 1938 for public works and equipment. A substantial part of the regular budget receipts was contributed by the Italian Treasury. The Maria Theresa thaler reappeared as currency in Ethiopia after the British occupation, the exchange rate being fixed at 45 lire to the thaler.

Transportation. A railway connects the port of Djibouti in French Somaliland with Addis Ababa (486 miles). Another line extends inland from Massaua on the Red Sea to Asmara, Cheren, Agordat, and Bisceia. From Mogadiscio on the Indian Ocean a railway extends inland 140 miles. During their five-year occupation of Ethiopia, the Italians built a network of motor highways linking Addis Ababa with Massaua, with Assab on the Red Sea, with Mogadiscio on the Indian Ocean, and with the other principal towns of Italian East Africa. A network of military airlines connected the chief centers and military posts of the colony. Massaua is the only safe port on the African coast between Port Sudan and Mombasa.

Government. The Italian Government formally annexed Ethiopia and proclaimed the King of Italy its Emperor on May 9, 1936. On June 1, 1936, Eritrea and Italian Somaliland were merged with Ethiopia to form Italian East Africa. The colony was administered by a Viceroy and Governor General at Addis Ababa, assisted by a Vice Governor General, a Chief of Staff, a consultative Council of Government composed of high government officials, and the governors of the six provinces (governments). There was also a Board of Consultors representing the white colonists and native chieftains. Viceroy at the beginning of 1941, the Duke of Aosta (appointed Nov. 20, 1937).

HISTORY

The British Conquest. A British offensive against the Italian forces in East Africa commenced in January, 1941, from various points in the Anglo-Egyptian Sudan and Kenya. Early in the month the Italians were driven from Kassala and most of the other positions in the Anglo-Egyptian Sudan and Kenya taken during the Italian offensive of 1940. From Kassala the main British force in the north advanced eastward along the Massaua-Bisceia railway. The Italian stronghold at Cheren was taken March 26 and Asmara, capital of Eritrea, capitulated April 1. On April 9 the port of Massaua surrendered, leaving Eritrea in British hands.

Meanwhile South Africa and other Imperial troops operating from Kenya had driven the Italians out of Italian and British Somaliland during February and March. Driving rapidly toward Addis Ababa from the south, they entered the capital on April 6. The bulk of the Italian garrison retreated northward to Dessve, leaving a small force in Addis Ababa to protect Italian civilians pending the entrance of the British. The Italian Viceroy with an army of some 38,000 men made his last stand at Alagi, Ethiopia, where he was caught between British forces advancing northward from Addis Ababa and southward from Asmara. He surrendered on May 19. Except for the region around Gondar, the remaining Italian garrisons in Ethiopia were rounded up and captured during June and July. Assab, last Italian port on the Red Sea, was occupied June 12. After the rainy season, a drive on Gondar brought the capitulation of the last Italian stronghold in East Africa on November 27.

Haile Selassie Regains Throne. British Empire forces were aided during these campaigns not only by Free French and Free Belgian detachments but also by Ethiopian regulars and guerrilla forces. The regulars were armed and trained by the British in the Anglo-Egyptian Sudan during 1940. The British also distributed rifles and ammunition to tribesmen loyal to Emperor Haile Selassie, who established his court at Khartoum in the Anglo-Egyptian Sudan in 1940. A few British officers ventured into Ethiopia to organize the guerrilla forces harassing the Italians in various parts of the country. There were estimated to be 200,000 guerrillas operating against the Italians when the British offensive began in January, 1941.

On January 15 the deposed Emperor, accompanied by his War Minister, Ras Kassa, and a high dignitary of the Ethiopian Coptic Church, was landed by a British airplane in Western Ethiopia, where he raised the standard of revolt. A patriot army rallied about him and launched an offensive against Italian forces in Western Ethiopia Debra Markos and a number of other Italian garrison posts were captured during the drive which took the Emperor from the Sudan border to Addis Ababa. Thousands of natives greeted him joyously when he rode into the capital on May 5. There he set about organizing his government and training a force of Ethiopian troops, which he offered to place at the disposal of the British anywhere in Africa or Asia. In an interview on May 8 he said his two principal objectives were to help Britain in the prosecution of the war and "to build here a state founded on the fear of God, liberty of conscience, and democratic institutions."

The Emperor received pledges of loyalty from a number of the powerful rases (chieftains) who had deserted him and thrown in their lot with the Italians during the invasion of 1935-36. Among them was Ras Seyoum, governor of Tigre Province, who asserted that he had secretly opposed the

Italians while professing to serve them. Through the joint efforts of the Emperor and the British commanding officers, the expected wholesale massacres of Italians by natives seeking revenge for the harsh treatment of preceding years was avoided. A few Italian civilians suffered at Dire Dawa and a few other points where native outbreaks took place just before the British entered to assume control.

British Administration. Pending the adjustment of permanent relations between Ethiopia and Great Britain, all of the conquered territory was placed under the jurisdiction of Lieut. Gen. A. G. Cunningham, British commander in East Africa. Administrators with experience in the British East African colonies were placed in charge of sub-divisions of the conquered territories. Sir Philip Mitchell, former Governor of Uganda and Deputy Chairman of the Conference of East African Governors, was appointed Political Adviser to Gen. Sir Archibald Wavell, commander-in-chief of all British forces in the Middle East, to assist in the administration of the former Italian territories. On August 26 London announced that East Africa, including all the former Italian territories, had been placed under a new East African Command with Lieut. Gen. Sir William Platt as commanding officer.

British-Ethiopian Relations. The British Foreign Office on July 11, 1940, undertook to assure Ethiopia's independence and recognize Haile Selassie's regime as the lawful government when the war was won. This pledge was reiterated by Foreign Secretary Eden before the British House of Commons Feb. 4, 1941. Eden said, however, that Haile Selassie had intimated that he needed outside help and guidance in expelling the Italians, and that Britain had agreed to provide it. The temporary measures of military guidance and control, he stated, would be carried out in consultation with Haile Selassie and "brought to an end as soon as the situation permits." He said that although Britain had no "territorial ambitions" in Ethiopia, the British Government took the view that Ethiopia would need political and economic aid and guidance at the conclusion of peace and that this could be provided for by an international agreement. This aroused talk of a possible British mandate over Ethiopia.

The Emperor and his associates were reported to have become restive over the restraints placed upon him by the British military commanders. However, a week after the capture of Gondar, the British East African command issued a communiqué at Nairobi, Kenya, stating that British forces would be withdrawn from Ethiopia and the country turned over to Haile Selassie's rule as soon as all Italian civilians and troops had been evacuated. There were said to be 125,000 Italians still at large in Italian East Africa, most of them in Eritrea and Italian Somaliland. The communiqué stated that men unfit for military service, women, and children would be sent from Ethiopia to Italy on Italian liners in February, while Italians of fighting age would be sent immediately to camps in British East Africa.

It was reported from Cairo on December 10 that American technicians and mechanics would be sent to Massaua and Asmara to convert Eritrea into a large-scale assembly and supply base for Allied armies operating throughout the Middle East and Africa.

See GREAT BRITAIN under *History*; WORLD WAR.

ITALIAN LITERATURE. Material gathered for this article appeared here and yon and was annotated un-

der the most difficult circumstances, for magazines, reviews, and publications arrived stintingly from Italy if at all, especially after April. The war, perforce, once again relegated the literary season into the background, forfeiting its premise to the department of History. Luckily, however, a number of scholarly and meritorious works were published outside of Italy. In America, for example, appeared *The Literary History of the Italian People* by Joseph Spencer Kennard, and Sylvia Sprigge's translation of Benedetto Croce's *History as the Story of Liberty*, works which, among others, may well be recorded as sober and intelligent research on the Italian People and their literature.

A widespread and feverish preoccupation which had literary and artistic results, might be called the art of "Compilation of Classics." Any publishing house of any note in Italy offered its specific "Series" or "Classics," prepared with pride and studious care as regards scholarship, patterns, and format.

The noteworthy Florentine review *Frontespizio* ceased publication in January, following the ill-fortunes and vicissitudes of countless other Italian reviews, as for example, *Pegaso*, which had so glorious and vitalic a beginning, but was doomed to a quick demise. *Frontespizio* at the outset had the collaboration of a trio of distinguished and eclectic literati, Giovanni Papini, Ardengo Soffici, and Piero Bargellini. The review was considered a "precious weapon for reconstruction in the field of letters and art." Predicating perhaps the old battle of internationalism versus Italian regionalism (or Italian art, culture, etc.), this publication augured a propitious weapon toward filling a void in the polemical discussion of contemporary Italian literature, and its disappearance constitutes a truly regrettable loss.

Fiction. There is very little to record in this department, due perhaps to the paucity of material reaching the United States. However, one memorable collection was launched by the enterprising house of Mondadori of Milan. These publishers brought forth the fifth volume of nine or ten of the series, *Tutte le opere (All The Works)* of Massimo Bontempelli. These five published volumes comprise all the author's novels, short stories, and other narrations, constituting rather bulky volumes of some 400 pages in attractive jackets. Lucilla Antonelli brought out a novel which poses a Pirandellian problem, *I fratelli lontani (Distant Brothers)*, Corbaccio, Milan. Enrico and Marco are sons of the same mother but of different fathers. The narration builds a subtle and dialectic argument as to the why and wherefore of the hatred and antipodal tastes of the two sons. In the end the problem is brought to an abrupt, if not too convenient, solution in a common grief that befalls the family and creates common sympathy and understanding. The novel to be impressive needed probably the ingenious and philosophical mind of a Pirandello. Nowhere, however, does it rise to a scintillating and convincing climax.

Drama. *L'eroe senza tragedia (The Hero Without a Tragedy)*, of Giovanni Cenozato, enjoyed an enviable success as a play in Rome. The title and the material is the reverse of Gino Rocca's highly amusing play *La tragedia senza eroe (Tragedy Without a Hero)*. Giovanni Cenozato's play creates a facetious situation in which the protagonist is advised to assume the role of a murderer to acquire fame. An elaborate concoction of his innocence in turn makes a hero of him, on the strength of which a rich woman marries him. The final tragedy sets in when his wife learns of his unquestionable innocence and divorces him forthwith. It is a whimsical

and very entertaining play, jocularly treated throughout. *La nostra via (Our Pathway)*, on the other hand, is an extremely serious and moral play by Marinucci. It received cold and adverse criticism, "our pathway is that which guides us toward the ideal of uncontaminated purity, and the world is but corruption, vileness, calculation, deceit—parents who build their castles of folly upon the ruins of domestic affection—elegant tennis players who shift from the embraces of their fiancées to the embrace of their fiancées' sisters." The play was stigmatized as one of "academic idealism"; it may be called an unsuccessful *coup d'essai* by a young man who has not yet emerged from "academic literature."

Criticism and Varia. In America scholars have been particularly active on Italian letters. First in order must be recorded Joseph Spencer Kennard's *A Literary History of the Italian People*, (The Macmillan Co., New York). This work takes its place easily among the best publications of the year. The work as a whole constitutes a monumental text for all English-speaking peoples enamoured of Italian Arts and Letters. In this connection also could be mentioned (though bearing 1940 as date of publication) Bernard Miall's translation of Luigi Salvatorelli's *A Concise History of Italy From Pre-historic Times to Our Own Day* (Oxford University Press, New York), an all-comprising history in outline form which may very readily be used as a reference work. Lastly, and also in the nature of a reference book, is Renato Piattoli's painstaking compilation of all the documents of the life of Dante Alighieri, his ancestors, heirs, events, etc., *Il Codice Diplomatico Dantesco* (Società Dantesca Italiana, Florence). This work draws to completion the undertaking started by other scholars as far back as 1895, and has an especial feature in some unpublished documents heretofore unnoticed. See SWISS LITERATURE.

O. A. BONTEMPO.

ITALIAN SOMALILAND. See ITALIAN EAST AFRICA; WORLD WAR.

ITALO-GREEK WAR. See WORLD WAR.

ITALY. A kingdom of southern Europe, upon which a Fascist dictatorship was superimposed beginning in October, 1922. Sovereign, King Victor Emmanuel III, who ascended the throne July 29, 1900; he assumed the title of Emperor of Ethiopia on May 9, 1936, and of King of Albania on Apr. 13, 1939.

Area and Population. Excluding Libya (q.v.), which became part of Italian national territory in 1938 and Albania (q.v.), which was annexed in 1939, Italy had an area of 119,714 square miles and a population estimated at 45,354,000 on Nov. 30, 1941 (42,444,588 at the 1936 census, which did not include 528,542 workers and soldiers in Africa). The 1936 census showed 31,735,027 urban and 11,258,575 rural residents. Living births in 1939 numbered 1,040,413 (23.5 per 1,000); deaths, 590,652 (13.4 per 1,000); marriages totaled 324,843 (7.4 per 1,000) in 1938. Emigrants in 1938 numbered 61,548, emigrants who returned to Italy totaled 36,892. Foreigners in Italy at the 1936 census numbered 108,597 as compared with an estimated 9,600,000 Italians living in other countries.

The city of Rome had an estimated population of 1,327,126 on Jan. 1, 1940. Other chief cities with the estimated populations on Jan. 1, 1939 (not including workmen and soldiers absent in Africa and the Dodecanese), were: Milan, 1,205,542; Naples, 920,460; Turin, 690,015; Genoa, 654,-

211; Palermo, 431,666; Florence, 351,055; Bologna, 315,158; Venice, 283,926; Trieste, 258,612; Catania, 251,978; Bari, 210,777; Messina, 202,375; Verona, 166,315; Padua, 150,203; Taranto, 151,150; Leghorn, 134,545; Brescia, 134,340; Ferrara, 122,913; Reggio di Calabria, 121,876; Cagliari, 119,934; La Spezia, 119,067.

Colonial Empire. At the beginning of 1941, the total area of Italy's overseas possessions (including Albania and Libya) was 1,279,589 square miles; population (1939 estimate), 14,186,401. See **ALBANIA**; **ITALIAN AEGEAN ISLANDS**; **ITALIAN EAST AFRICA**; and **LIBYA** for separate articles. Also see below under *History*.

Education and Religion. School enrollment in 1937-38 was: Elementary, 5,051,306; secondary (including technical and art), 613,588; higher education (1938-39), 77,429. One out of every five adults is illiterate. According to the census of 1931 there were 41,014,096 Roman Catholics (99.6 per cent), 83,618 Protestants, and 47,825 Jews.

Production. About 46.3 per cent of the working population was engaged in agriculture and fishing in 1939, 30.4 per cent in mining, quarrying, and industry, 8.3 per cent in commerce, and 4.6 per cent in transportation. According to the 1939-40 industrial census, Italy had 1,079,613 manufacturing firms (720,006 classified as workshops run by craftsmen), 1,172,752 commercial firms, and 146,870 firms engaged in communications and transport. The total number of industrial workers, according to statistics issued by the Fascist Confederation of Industrialists in 1940, was 3,825,542, apportioned mainly as follows: Building enterprises, 623,000, foodstuffs, 389,000; mechanical and metallurgical, 709,000; building materials, 541,000, textiles, 653,142; chemicals, 155,192.

The accompanying table compares agricultural production in 1939 and 1940 with the 5-year average for 1931-35:

Commodity	1931-35 av.	1939	1940
Wheat ^a .1,000 bushels	267,140	293,285	260,880 ^b
Rice 1,000 pounds	1,507,320	1,680,448	1,853,350
Rye 1,000 bushels	6,281	5,950	5,998
Barley do	10,300	10,816	10,056
Oats do	38,015	37,690	39,318
Corn do	104,528	101,661	135,006
Potatoes do	88,524	102,155	121,211
Tomatoes 1,000 pounds	1,818,354	1,931,318	2,444,813
Sugar beets 1,000 met tons	2,418	2,671	5,200

^a The wheat crop reached a record high of 297,317,000 bushels in 1938 and was nearly as large in 1937. Unfavorable weather was primarily responsible for the decline in 1940.

^b This revised figure is from an Italian press item of Sept. 28 1941. This item states that the 1941 crop amounted to only 262,717,000 bushels, the 1940 and 1941 crops being the smallest since the beginning of the "battle of grain."

Production of other crops was: Potatoes, 2,941,600 metric tons in 1939; beet sugar, 420,300 metric tons in 1939; raw silk, 7,427,400 lb. in 1940; olive oil, 175,300 metric tons in 1938; wine, 41,780,000 hectoliters in 1938.

Mineral and metallurgical production in metric tons in 1938 (except where otherwise specified) was: Iron ore, 520,000; lead (smelter), 38,000 (1939); zinc (smelter), 33,600 (1939); pyrites, 437,000; lignite, 1,322,000; sulphur (crude), 397,000; asphaltic and bituminous rock, 258,047; marble, 457,222; marine salt, 883,420; bauxite, 360,800; mercury, 195,523; aluminum, 28,000 (1939); tin (smelter), 300; pig iron, 929,000; steel ingots and castings, 2,307,000; copper, 4,700; cement, 4,587,000. Rayon production in 1939 was 54,000 metric tons; cotton (1938), 7,500 metric tons. Woolen textiles, chemicals, sulphuric acid, superphosphate, copper sulphate, cheese, and alimentary pastes are other important manufactures.

Foreign Trade. Publication of trade figures was suspended in 1940. The Bank of Italy reported imports of 10,000,000,000 lire in 1939 (10,900,000,000 in 1938) and exports to foreign countries of 8,500,000,000 lire (7,960,000,000 in 1938). In the first seven months of 1939, exports to Italy's overseas possessions totaled \$64,381,000 and imports from the possessions \$8,927,000. After Italy entered the war in June, 1940, Germany strengthened its position as the chief source of imports and destination of exports. For distribution of trade in 1938, see **YEAR BOOK** for 1939, p. 386. Also see **TRADE, FOREIGN**.

Finance. For the six fiscal years ended June 30, 1940, Italy accumulated an aggregate budget deficit of more than 82,000,000,000 lire. The Minister of Finance in May, 1941, estimated total revenue for the fiscal year 1940-41 at 31,000,000,000 lire and expenditure at 96,000,000,000. Ordinary budget estimates for 1941-42 placed receipts at 31,082,000,000 and expenditures at 39,876,000,000 lire (exclusive of war costs and other extraordinary expenses). The Government announced Oct. 2, 1941, that an additional war fund of 24,000,000,000 lire was placed at the disposal of the War Ministry on August 31. As of June 30, 1940, the public debt was reported at 200,000,000,000 lire. The deficit of 65,000,000,000 lire in 1940-41 would bring the total on June 30, 1941, to 265,000,000,000. Average exchange value of the lira: \$0.0520 in 1939, \$0.0504 (nominal) in 1940.

Transportation. The Italian state railways, with 10,551 miles of line, carried 107,800,000 passengers and 54,183,672 metric tons of freight in 1938-39. Private railway lines extended 3,897 miles. Highways, 126,830 miles in January, 1941. Railway traffic was restricted by a severe coal shortage after Italy entered the war. Italian air lines extended 25,373 route miles in August, 1939. The Rome-Rio de Janeiro air service, inaugurated by the Italian LATI system in December, 1939, maintained a weekly service throughout 1941. The Italian merchant marine on June 30, 1939, comprised 1,350 steam and motor ships of 1,989,482 tons. During 1939, 12,119 vessels of 22,816,000 net registered tons entered Italian ports in the foreign trade.

Government. Italy's Fascist dictatorship was superimposed upon the constitutional monarchy established by the Constitution of Mar. 4, 1848. Under the law of Dec. 9, 1928, the Fascist Grand Council, consisting of (1) life, (2) ex-officio, and (3) extraordinary members, acted as "the supreme organ coordinating and uniting all the activities of the regime." The life members (two in 1941) were the Quadrumvirs of the March on Rome. Members in the other two categories were all appointed by the Head of the Government.

Parliament consisted of a Senate (535 members in 1941), all appointed for life by the King on nomination by the Head of the Government, and a Chamber of Fasces and Corporations, which on Mar. 23, 1939, replaced the Chamber of Deputies provided for in the 1848 Constitution. The Chamber of Fasci and Corporations was composed of about 700 National Councillors, who held their seats by virtue of membership in The Fascist Grand Council, the National Council of the Fascist party, and the National Council of Corporations. By the law of Oct. 7, 1938, both the new Chamber and Senate were restricted to voting by a show of hands or by acclamation, instead of the former secret ballot. They could vote only on measures submitted to them by the Head of the Government or on matters that he had previously authorized them to discuss.

At the beginning of 1941, the Cabinet was constituted as follows: Premier, Head of the Government, and Minister of Interior, War, Navy, Air, and Land Reclamation, Benito Mussolini; Foreign Affairs, Count Galeazzo Ciano; Italian Africa, Ottilio Teruzzi; Corporations, Renato Ricci; National Education, Giuseppe Bottai; Agriculture and Forests, Giuseppe Tassinari, Finance, Count Paolo Thaon di Revel; Justice, Count Dino Grandi; Communications, Giovanni Host Venturi; Popular Enlightenment, Alessandro Pavolini; Public Works, Giuseppe Gorla; Trade and International Payments, Raffaello Riccardi; Secretary-General of the Fascist party, Adelchi Serena. See below for changes during 1941.

HISTORY

For Italy the year 1941 was one of successive military and naval disasters, growing economic privation, increasing dependence upon Germany, and mounting discontent with the leadership of Premier Mussolini and his Fascist party.

As described in the article *WORLD WAR*, Marshal Graziani's armies in Libya suffered a crushing defeat in January and February. The Italian forces in Albania were saved from impending disaster only by German military intervention in the Balkans in April. Addis Ababa fell to British Imperial forces on April 6. The Duke of Aosta surrendered the main Italian army in Ethiopia on May 19 and by the end of November the Italian empire in East Africa was completely liquidated.

Italian hopes for eventual victory were revived in the spring when the Germans overran Yugoslavia, Greece, and Crete and drove the British forces in Libya back to the Egyptian frontier. But these hopes sank again with the steady whittling down of Italian naval and air power, the launching of a second successful British offensive in Libya in November, the German failure to knock out the Russian army, and the entrance of the United States into the war in December. Persistent British air raids upon the cities and military-naval bases in southern Italy likewise served to undermine morale.

Anti-Fascist sentiment spread among all sections of the population, including the professional army officers who held Mussolini and his associates responsible for Italy's military setbacks. In addition to the heavy military casualties in Albania, it was reported that thousands of soldiers lost their feet or legs from frostbite for lack of proper equipment for winter campaigning. Italy's growing military, economic, and political dependence upon Germany was even more humiliating to the Italian people, who saw the hated German secret police and armed forces spreading their tentacles over the kingdom. The morale of the nation was clearly a matter of anxiety to the Fascist regime by the end of 1941, but experienced observers warned the anti-Axis world not to expect an early Italian collapse.

Political Developments. Mussolini's political difficulties were reflected in the numerous shake-ups of military, governmental, and Fascist party officials announced during the year. January saw the replacement of Gen. Ubaldo Soddu by Gen. Ugo Cavallero as Italian commander in Albania, the promotion of Crown Prince Humbert to the rank of an Army General, and the transfer of prominent members of the Government and party from their official duties to service on the Albanian front. Foreign Minister Ciano and half the other members of the Cabinet were assigned to active military duty, apparently in an effort to end criticism of high party officials as "slackers" and beneficiaries of Il Duce's

favoritism. Numerous changes in the Rome hierarchy of the Fascist party were announced February 4 and the displaced officials were sent to the Albanian front. There were arrests of "defeatists" and critics of the regime.

On February 23 Premier Mussolini broadcast to the nation his defense against the charges of Marshal Graziani and other army officers that Italian defeats were due to inadequate preparation and equipment (see *YEAR BOOK* for 1940, p. 376). He admitted that in Libya "the entire Tenth Army has been smashed with its armaments and guns and the Fifth Air Corps has been almost completely sacrificed." But he asserted that in preparation for the Libyan campaign, he had sent 14,000 officers, nearly 400,000 soldiers, 1,924 cannon, 15,386 machine guns, 779 tanks, 9,584 motor vehicles, and 4,809 motorcycles to North Africa between Oct. 1, 1937, and Jan. 31, 1940. He promised the defeat of Greece "in the spring" and said that Italy would "march side by side with Germany to the end." Describing Germany's military strength, he declared it assured the Axis of eventual victory over Britain, even if the British received American help.

Count Dino Grandi's transfer from the post of Minister of Justice to army service was announced March 7. On March 25 Marshal Graziani was dismissed as commander-in-chief in North Africa. King Victor Emmanuel narrowly escaped an assassin's bullets in Albania May 17. On May 29 Rome announced the replacement of Lieut. Gen. Achille Starace as chief of the Fascist Militia's general staff by Lieut. Gen. Enzo Galbiati. Meanwhile the successful conclusion of the Balkan campaign through German intervention, with territorial compensation to Italy, brought distinct improvement in Italian morale.

On June 10, the first anniversary of Italy's entrance into the war, Mussolini listed Italy's gains in a speech before the Chamber of Fasces and Corporations. He said part of Slovenia had become an Italian province and that "with the annexation of almost all the islands of the Dalmatian Peninsula, with the creation of two provinces of Split and Kotor, and the enlarging of old, extremely faithful Zara, the Dalmatian problem may be considered solved." To the Italian protectorate of Albania had been added the Kossovo district of Yugoslavia and the Greek district of Ciamura. Montenegro was to be "independent within the Italian orbit." The newly installed Pavelich regime in Croatia formally accepted Italian tutelage and an Italian ruler. Finally, by arrangement with Germany, almost all of Greece including its capital had been occupied by Italian troops. See *ALBANIA, GREECE, and YUGOSLAVIA* under *History*.

By autumn it became clear to many Italians that their territorial and other gains in the Balkans were largely illusory. Croatia was actually run by and for the Germans, and its government turned increasingly to Berlin rather than Rome. Italian troops occupied Greece but the German authorities in Athens exercised actual control. Revolts in Montenegro, Albania, Slovenia, and Dalmatia harassed the Italian occupational forces. Disputes arose with Bulgaria and Croatia over the division of territorial spoils.

Meanwhile Italy was forced to pay an increasingly high price for Hitler's military assistance. Supplies of foodstuffs, raw materials, and other commodities began to run low, due in large part to heavy shipments to the Reich in payment for German coal, oil, etc. On July 29 the first of the Italian divisions to be sent to the Russian front was reviewed by Mussolini at Mantua. As German diffi-

culties in Russia increased Hitler raised his demands upon Mussolini for further aid. The British stepped up the tempo of their naval and air attacks upon Italian shipping, defense bases, and cities. September brought a drastic curtailment of food rations and the progressive elimination of luxuries.

Reviving political discontent was reflected in the all-round tightening of governmental control measures and the steady extension of German influence. Minor disorders were reported in the industrial centers of Northern Italy, while Sicily was said to be smouldering with revolt. To still the rising criticism of the Fascist hierarchy, Mussolini on October 25 announced a sweeping reorganization affecting 19 of the 22 Fascist guilds which controlled the nation's economic life. Seventeen young "vice federal secretaries" of the Fascist party were appointed November 17 and assigned to posts in northern and southern Italy, apparently to bolster failing morale with the party's ranks. The most extensive shake-up ever made in the Fascist National Council took place December 3. Twenty-eight new council members were appointed, 21 removed, and 40 others confirmed. Numerous party functionaries were among the hundreds of Italians charged with food bootlegging and profiteering.

The trial of 60 persons charged with conspiring to assassinate Mussolini and overthrow the Fascist regime was opened in Trieste before the Special Tribunal for Defense of the State on December 2. The blowing up of three powder factories in 1940, with the loss of 137 lives, was attributed to the defendants. Nine of them were sentenced to death December 14. Forty-eight received prison terms of from 3 to 30 years. Three were acquitted.

Mussolini's declaration of war upon the United States on December 11 aroused deep forebodings among the Italian people. A week later the Premier sharply attacked the lack of determination on Italy's home front, calling upon his countrymen to "hate the enemy before us." There followed on December 26 the resignations of Adelchi Serena, Secretary of the Fascist party, and of Giuseppe Tassinari, Minister of Agriculture. They were succeeded by Aldo Vidussoni and National Councilor Pareschi, respectively. These changes were attributed to dissatisfaction with the food situation and to protests within the Fascist party against Mussolini's acceptance of German demands on Italian food supplies.

Economic Scarcities. The increasing severity of rationing measures indicated a growing scarcity not only of food but of raw materials and other essential commodities. Ration cards for diners in restaurants were introduced February 1. On February 21 olive oil, butter, and fat rations were cut in half. Gasoline rations were halved April 10. On May 4 meat was made available twice, instead of three times, weekly. The making of biscuits or crackers of flour, milk, or rationed fats was banned effective June 15. The soap ration was cut from 200 grams monthly to 150 grams on September 1. Restriction of restaurant meals was extended on September 3. A decree of September 13 paved the way for rationing of clothing, textiles, and shoes. Starting October 1 bread was rationed at 7 ounces per person daily, and sales of most of the consumer commodities were banned for a month as a prelude to rationing.

These developments were accompanied by rapidly mounting prices notwithstanding government price curbs; extension of the normal working week to at least 60 hours in the metal and mechanical industries; the virtual paralysis of many peace-time industries for lack of raw materials and fuel; the spread of food profiteering and fraud in military

contracts, provoking sharper punitive laws; the imposition on November 11 of a 10 p.m. curfew on bus and street-car transportation in all cities, and restriction of the use of gas for cooking and heating water to 7½ hours daily. Subscriptions to a forced loan, which closed September 30, brought in 20,216,082,000 lire of cash, as compared with receipts of 15,272,884,000 lire raised by a similar loan in February.

Anti-Liberal Trend. The political, economic, and military difficulties of the Government led the Fascist regime to place new emphasis upon its revolutionary aspects. Discriminatory restrictions were imposed upon the nobility, business men, and capitalists, and the middle class in general. The regime espoused new and more harsh anti-Jewish legislation, providing for the expulsion of all non-Aryans from the country. There was an increase in tension between the Fascist State and the Vatican. In March Fascist authorities banned distribution of a pastoral letter issued by the Bishop of Cremona describing "perverse or inept rulers" as a form of God's punishment upon peoples abandoning the Christian faith to embrace "idolatry." The Under-Secretary of the Interior on April 19 publicly warned the Vatican to stay out of politics. The Cremona newspaper *Regima Fascista*, owned by the radical ex-Secretary of the Fascist party, Roberto Farinacci, waged a vigorous campaign against the allegedly anti-Axis policies of the Vatican, particularly its refusal to endorse the Axis campaign against Russia. Other Fascist organs joined in this attack. The Italian Government in August reportedly demanded the expulsion from Italy of the British and Yugoslav Ministers to the Holy See.

Relations with Germany. Vatican circles, like many other elements in Italy, were alarmed by the growing Nazi control over Italian political and economic as well as military affairs. This control was exercised directly through German officials in Italy and indirectly through the influence of the radical, pro-Nazi faction within the Fascist party—a group which enjoyed Mussolini's growing favor.

Several conferences between Il Duce and the German Fuehrer paved the way for closer Italo-German collaboration. It was announced in Rome and Berlin January 20 that the two dictators had conferred secretly and reached "complete agreement" on all questions. The form of German military aid to Italy was believed the chief issue discussed. About the same time a German mission of 35 economic experts arrived in Rome for the purpose of coordinating German and Italian economic resources to better advantage. An agreement for larger exports of Italian foodstuffs to Germany in return for German coal, steel, and iron was announced February 4. Numerous German industrialists reached Milan February 7 to take charge of Axis industrial cooperation measures. New contingents of Italian workers were sent to German farms and factories to replace Germans called to arms or sent to administer conquered territories. Signature of a secret economic pact was announced February 27.

A three-day conference of Italian and German representatives in Vienna on March 21 agreed upon larger Italian food shipments to the Reich. Mussolini and Hitler met again at the Brenner Pass on June 2. According to Mussolini's spokesman, Virginio Gayda, they organized the Axis for action against United States intervention in the war. The German attack on Russia likewise was discussed, for on June 26 Rome announced that Italian troops would participate in the campaign. Another conference between Mussolini and Hitler took place on the Russian front on August 25-29. A com-

muniqué issued at its close referred to the "community of fate" of the two dictators and promised the "destruction of the Bolshevik danger and plutocratic exploitation." Indications were that Hitler asked for the dispatch of more Italian troops to the Russian front. At the end of September Il Duce was said to have agreed to send three divisions to Russia in place of the 10 requested by Hitler.

Dr. Wilhelm Funk, Reich Minister of Economics, laid plans for closer Italo-German economic cooperation and for Italian aid in exploiting conquered Russian territories during a visit to Rome on October 19-23. He assured the Italians that under Hitler's "new order" in Europe, Italy would exercise economic and political domination over the Mediterranean. On October 25 Count Ciano, who had resumed his duties as Foreign Minister, conferred with Hitler on the Russian front. They were said to have discussed the sending of thousands of Italian farmers to the conquered Ukraine to assist in increasing agricultural production. It was also reported that Ciano demanded full control over occupied zones in Greece and Yugoslavia. On behalf of Italy, Count Ciano signed the protocol extending the Anti-Comintern Pact for another five years at the ceremonies in Berlin November 25 (see FASCISM).

War with United States. Mussolini followed in Hitler's footsteps throughout the train of events leading to the Axis war declarations against America in December. On February 12 Italy insisted upon the removal of the American Consulates at Naples and Palermo. Washington replied by closing the Italian consular offices in Detroit, Mich., and Newark, N.J., and restricting movements of Italian consular agents in the United States. The U.S. Government seized 28 Italian merchant ships totaling 168,944 gross tons in American ports March 30 and arrested officers and sailors who had sabotaged the ships' machinery on orders of the Italian naval attaché in Washington. The U.S. demanded the naval attaché's immediate recall. Italy retaliated by forcing the recall of the U.S. military attaché in Rome.

When Italian assets in the United States were ordered frozen June 14, Italy took similar measures against American assets. On June 21 the Italian Embassy in Washington was requested to close all its consular offices and other Italian agencies in the United States by July 15. Italians were forbidden to leave the United States without authorization. This measure was immediately applied to American citizens in Italy. The climax came on December 11, five days after Japan's treacherous attack upon the United States, when Mussolini informed millions of Italians gathered before radios in all parts of the country that they were at war with America. All of the Central American and Caribbean republics of the New World followed the United States into war with Italy. Mexico, Colombia, and Venezuela immediately severed diplomatic relations with Rome. In all other Latin American countries Italian prestige reached a new low.

Relations with France and Spain. Italy's claims upon Tunisia, Corsica, Nice, and other French territories were an important factor affecting the important Franco-German collaboration negotiations (see FRANCE under *History*). The danger that Hitler would repudiate his pledges to Italy in order to win the Vichy Government over to full military and naval collaboration with the Axis hung over all Italo-German relations during 1941. In a speech in Rome on November 3 Mussolini indicated that he had not forgotten or relaxed Italy's demands for French territories. However a subsequent confer-

ence between Admiral Darlan and Count Ciano in Turin December 9 led to modification of the armistice terms and to an economic accord (see FRANCE under *History*).

The year also witnessed a further replacement of Italian influence in Spain by Germany, despite Mussolini's strong claims upon General Franco. The Spanish seizure of Tangier was apparently designed in part to forestall Il Duce. Mussolini and Franco conferred at Bordighera, Italy, on February 12 and announced their "identity of views on problems of a European character." The subject of their discussion was not disclosed.

Free Italy Movement. A Free Italian Committee, composed of Italians pledged to overthrow Mussolini and restore democracy was established in London in February with the aid of the British Ministry of Information. An associated committee was formed in New York. This movement gained strong impetus throughout the Western Hemisphere as a result of the establishment of the anti-Axis black list by the United States. The Axis declarations of war upon the United States gave additional momentum to the agitation, which was led by Count Sforza and other prominent exiles.

See BRAZIL, CHINA, COSTA RICA, CUBA, EGYPT, GERMANY, GREAT BRITAIN, GREECE, IRAQ, ITALIAN EAST AFRICA, PERU, SPAIN, VENEZUELA, and YUGOSLAVIA, under *History*; CHEMISTRY, INDUSTRIAL; FASCISM; LABOR CONDITIONS under *Women in Industry*; MUSIC; NAVAL PROGRESS; NEWSPAPERS AND MAGAZINES; PAN AMERICANISM; RAPID TRANSIT; ROMAN CATHOLIC CHURCH; UNITED STATES under *Foreign Affairs*; WORLD WAR.

IVORY COAST. See FRENCH WEST AFRICA.

JACKSON DAY DINNERS. See DEMOCRATIC PARTY.

JAMAICA. A British West Indian crown colony. Area, 4,450 square miles; population (Jan. 1, 1939 estimate), 1,173,645, including 19,039 East Indians. The Cayman Islands (104 sq. mi.; pop. 6,975 in 1939), Turks and Caicos Islands (166 sq. mi.; pop. 5,300 in 1939), Morant Cays, and Pedro Cays (Guano Islands) are dependencies of Jamaica. Chief towns (1921 census): Kingston (capital), including Port Royal, had 63,711 inhabitants; Spanish Town, 8,694; Montego Bay, 6,580; Port Antonio, 6,272. Education (1938): 664 public elementary schools and 163,732 students enrolled. In addition, there were 9 industrial schools and various secondary and high schools.

Production and Trade. Sugar (156,550 long tons for 1940-41; 168,830 tons estimated for 1941-42), bananas, coffee, rum, coconuts, pimento, grapefruit, ginger, cacao, oranges, tobacco, and logwood are the main agricultural products. Livestock (1938-39): 124,257 cattle, 10,800 sheep, 20,977 horses, mules, and donkeys. Trade (1940): £6,000,000 approximately for imports and about £3,000,000 for exports (bananas 7,500,000 stems, compared with 18,750,000 stems in 1939). Shipping (1938): 1,403 vessels aggregating 4,279,017 tons entered.

Communications. In 1940 there were 210 miles of railway open to traffic and for the fiscal year ended Mar. 31, 1940, 298,000 tons of freight and 421,767 passengers were carried. At the end of 1940 roads totaled 6,914 miles. There were 1,628 miles of telegraph line and 3,927 miles of telephone line. On Aug. 19, 1941, the Royal Dutch Air Lines started a weekly air service linking Kingston with Curaçao, Aruba, and Trinidad.

Government. Finance (revised estimates for

1940-41): £3,201,164 for revenue and £3,431,756 for expenditure. Public debt (Mar. 31, 1939): £6,303,139. The governor is assisted by a privy council. There is a legislative council of 30 members (the governor as president, 5 ex-officio, 10 nominated, and 14 elected). Captain-General and Governor-in-Chief, Sir Arthur Richards (appointed June 15, 1938).

History. The Anglo-American agreement of Sept. 2, 1940, for the establishment of United States naval and military bases in Jamaica (see YEAR BOOK for 1940, p. 377) was incorporated in the treaty signed in London Mar. 27, 1941 (see GREAT BRITAIN under *History*). Under the treaty, the Governor of Jamaica leased six areas on the south coast to the United States for 99 years, as follows: (1) The waters of and approaches to Portland Bight, including Galleon Harbor and Goat Islands (about 2 sq. miles); (2) A section of the shoreline of Portland Ridge peninsula (18 sq. miles); (3) A tract of some 34 square miles, including part of the shoreline of Manatee Bay; (4) Pigeon Island (50 acres); (5) An area of 1 square mile between Rest and May Pen, along the canal between Rhynsberry and Manningsfield, and (6) About 225 acres near the intersection of the Dunkeld-Mandeville Road and the Jamaica Railway.

The U.S. Government proceeded to develop facilities on these sites designed to make them the main supply depot for its Caribbean naval and air forces, as well as a watch station on the Panama shipping route. It obtained the right to share in the use of British military airfields and of the naval dockyard at Port Royal. The United States was authorized to expand the facilities at Port Royal for the supply, maintenance and repair of naval vessels. American naval officials took formal possession of the leased area at Portland Bight on April 4 and the construction of the naval air base there was in full swing in May, giving employment to many Jamaicans. The cost of the naval and naval-air installations was placed at \$2,275,000.

Fearing a shortage of labor during the time of the construction of the United States bases, employers of labor in Jamaica were offering their skilled and unskilled workers the option of signing five-year work contracts. Some thousands of skilled and semi-skilled workers went to work on the locks of the Panama Canal, and a hundred highly skilled engineers went to Great Britain to work in munition factories.

Lord Moyne, British Colonial Secretary, on Mar. 12, 1941, announced that constitutional reforms based on the recommendations of the West India Royal Commission had been discussed with the Jamaican governor and that the changes recommended for consideration by the legislative council of Jamaica were: (1) Universal adult suffrage; (2) An enlarged legislative council of not less than 40 members, to comprise approximately double the present number of elected members, nominated members to be representative of all sections of opinion and to vote freely, and 3 (instead of 5) official members. The People's National Party, the delegates of which on May 8, 1941, had voted unanimously for self-government or dominion status in 1948 or before, decided, in June, to accept the new Constitution if certain amendments were incorporated. On Aug. 22, 1941, after a debate lasting three days, the legislative council rejected the Constitution suggested by the British Colonial Secretary. An amendment was adopted by the legislative council asking for a legislature of two houses such as exists in Barbados and had existed in Jamaica prior to 1866.

JAMES FOUNDATION. See PHILANTHROPY.

JAN MAYEN. An arctic island (34 miles long and 9 miles wide) between Greenland and northern Norway, 220 miles north-northeast of Iceland. Area, 144 square miles. It is mountainous, Beerenberg in the north being 8,350 feet high. A meteorological station was established on the island by Norwegians in 1921. On May 8, 1929, Jan Mayen was officially proclaimed as Norwegian territory and was joined to Norway by the law of Feb. 27, 1930.

JAPAN. A Far Eastern empire, comprising (1) Japan proper, or the five main islands of Honshu, Kyushu, Shikoku, Hokkaido, and Ryukyu, with some 600 smaller islands; (2) Formosa (Taiwan); (3) Korea (Chosen); (4) Karafuto (southern Sakhalin); and (5) Pescadores (Bokoto) Islands. In addition Japan controlled the leased territory of Kwantung and the South Manchuria Railway Zone in Manchuria and mandated territories (Marianne, Caroline, and Marshall Islands) in the North Pacific. During 1931-33 it established a protectorate over three Chinese provinces (Liaoning, Kirin, and Heilungkiang) in Manchuria and Jehol Province in Inner Mongolia, forming them into the new state of Manchoukuo. Capital of Japan, Tokyo; Emperor, Hirohito, who ascended the throne Dec. 25, 1926. See separate articles on FORMOSA, KOREA, KARAFUTO, JAPANESE PACIFIC ISLANDS, KWANTUNG, and MANCHOUKUO.

Area and Population. The area and population of the empire at the censuses of 1935 and Oct. 1, 1940, are shown in the accompanying table.

JAPANESE EMPIRE AREA AND POPULATION

	Area sq miles	Population, 1935 census	Population, 1940 census
Japan proper	147,593	69,254,148	73,114,308
Korea	85,228	22,899,038	24,326,327
Formosa ^a	13,880	5,212,426	5,872,064
Karafuto	13,434	331,943	414,891
Kwantung ^b	1,438	1,656,726	1,367,334
Mandated Pacific Is	830	102,537	131,157
Japanese Empire	262,912	99,456,818	105,226,101

^a Including Pescadores (Bokoto) Islands, area, 49 square miles ^b Including South Manchuria Railway Zone

According to the 1940 census, there were in the empire 52,896,862 males and 52,329,239 females. The population of Japan proper increased 5.6 per cent during the inter-censal period 1935-40 as against 7.5 per cent during 1930-35. The increase for the empire as a whole was 6.4 per cent for 1935-40 and 8.2 per cent for 1930-35. The number of Japanese subjects residing in foreign lands in 1938 was 1,059,913, while the number of foreigners residing in Japan was 29,212. United States citizens in Japan on Jan. 1, 1941, numbered 5,295.

Living births in 1938 numbered 1,928,321 (26.7 per 1,000 as against the pre-war rate of about 36 per 1,000); deaths, 1,259,805 (17.4 per 1,000); marriages, 538,831 (7.46 per 1,000). The populations of the chief cities at the 1940 census were: Tokyo, 7,778,804; Osaka, 3,252,340; Nagoya, 1,328,084; Kyoto, 1,089,726; Yokohama, 968,091; Kobe, 967,234; Hiroshima, 343,968; Fukuoka, 306,763; Kawasaki, 300,777; Yawata, 261,309.

National Defense. Military and naval service is universal and compulsory. An official Washington estimate placed the active army on Jan. 1, 1941, at 1,554,000; trained army reserves, 701,000; active air force, 35,500; trained air force reserves, 16,000. Military and naval planes numbered approximately 3,000; production of new planes was estimated at 1,500 to 2,500 annually. The navy on Jan. 1, 1941, was reported to comprise 10 battleships, 7 aircraft carriers, 35 cruisers, 5 coast defense ships, 103 de-

stroyers, 12 torpedo boats, and 65 submarines. Five or six battleships, 4 pocket battleships, 5 or more cruisers, 2 aircraft carriers, and various destroyers, submarines, and auxiliary vessels were under construction. The active naval personnel was over 107,000.

Education and Religion. Illiteracy is confined largely to people over 50 years of age. The school enrollment in 1937 was: Kindergarten, 152,627; elementary, 11,566,912; secondary, 842,792; universities and colleges, 72,195; special and technical schools, 531,807; preparatory technical schools, 1,964,599. There is no State religion. Shintoism, with 13 different sects, and Buddhism, with 12 sects, are the principal religions. In 1940 all religious groups were brought under State control and the Christian denominations were merged in a single Japanese Christian Church.

Production. Manufacturing normally accounts for about 32.7 per cent of the national income (estimated at 24,519,036,000 yen in 1939), commerce for 25.4 per cent, and agriculture for 17.7 per cent. Agriculture, however, supports nearly half the population of Japan proper. The Ministry of Agriculture and Forestry estimated the value of agricultural products in 1940 at 8.5 per cent less than the total of 5,614,000,000 yen recorded for 1939. Farm income in 1940 was estimated at 4,000,000,000 yen. The 1940 rice crop in Japan proper amounted to about 310,000,000 bu. (about 295,672,000 m 1941); raw silk, 711,902 bales (of 132.25 lb.) for year ended May 31, 1941; wheat, 1,785,660 metric tons in 1940 (1,568,580, estimated, m 1941); barley, 1,687,300 metric tons in 1940. sugar (Japan and Formosa), 992,760 metric tons in 1940-41; potatoes, 1,848,100 metric tons in 1938; tobacco, flue-cured, 122,000,000 lb. m 1941 (Japanese Empire); tea, 57,500 metric tons in 1939. The value of raw marine products in 1938 was 248,895,000 yen.

In 1937 textiles accounted for 25 per cent of the value of all manufacturing output; metals and metal products, 21 per cent, chemicals, 18.9; machinery and tools, 15.3. The world's leading exporter of cotton piece goods, Japan in 1940 exported 1,800,000,000 sq. yd. of cotton cloth valued at 378,000,000 yen, the lowest volume since 1931. Output of rayon was 108,569 metric tons in 1939; cement, 5,074,000 metric tons (for Japanese Empire), newsprint, 407,632 short tons in 1940. Leather, headgear, pottery and lacquer wares, mats, crude camphor and camphor oil, brushes, vegetable oil, sugar, rice wine, beer, and tobacco products are other leading manufactures. The output of crude petroleum in 1940 was 2,639,000 bbl. Other metal and metallurgical production was (m metric tons): Coal, 53,000,000 in 1938 (including Korea and Formosa); pyrites, 1,751,000 in 1936; manganese ore (metal content), 34,000 in 1936; iron ore, 470,000 in 1936; pig iron and ferro-alloys, 2,635,000 in 1937; steel ingots and castings, 5,811,000 in 1937 (including Korea); copper ore (metal content), 77,000 in 1939; aluminum (smelter), 23,000 in 1939; gold, 26,000 kilograms in 1939.

Foreign Trade. Publication of detailed foreign-trade statistics was officially prohibited from Oct. 16, 1940. Imports of the entire Japanese Empire in 1940 were 3,709,000,000 yen and exports 3,972,000,000 yen, increases of 18.6 and 1 per cent respectively over 1939. Imports of Japan proper were 2,492,042,000 yen for the first nine months of 1940; exports, 2,743,223,000 yen. For the calendar year 1939 imports of Japan proper were 2,917,666,000 yen; exports, 3,576,370,000 yen. Japan's trade with foreign-currency countries for the calendar year 1940 was (unofficial estimates): Imports, 2,700,-

000,000 yen; exports, 1,800,000,000 yen. For trade with United States in 1940 and 1941, see **TRADE, FOREIGN.** The United States, Manchoukuo, China, British India, Netherlands Indies, and Great Britain, in the order named, were Japan's principal customers or sources of supply in 1939.

The chief 1939 exports were (millions of yen): Raw silk, 507; cotton tissues, 404; machinery, 209; ores and metals, 139, rayon, 137; tinned and bottled foods, 132; timber, 129; paper, pulp, and manufactures, 120, drugs and chemicals, 108. The leading imports were (millions of yen): Ores and metals, 848; raw cotton, 462; machinery, etc., 288; oils, fats, etc., 263; drugs and chemicals, 171; fertilizers, 108.

Finance. As a result of the war with China beginning in July, 1937, total budget appropriations increased from 2,272,100,000 yen (actual expenditure) in the fiscal year ended Mar. 31, 1937, to 12,875,000,000 yen (budget estimate) in 1941-42. Of the latter total, 7,575,000,000 yen were to be raised by loans. The direct cost of financing the war in China for 1941-42 was placed at 4,880,000,000 yen. See **YEAR BOOK** for 1940, p. 379, for preceding budgets. The national debt rose from 10,578,000,000 yen in July, 1937, to 32,936,000,000 yen on July 31, 1941. Appropriations for the Chino-Japanese war from September, 1937, up to Jan. 1, 1942, aggregated 22,335,000,000 yen. The average exchange rate of the yen was $\$0.2596$ in 1939 and $\$0.2344$ in 1940.

Transportation. Japan had 11,144 miles of State and 4,240 miles of private railway lines in 1938, 591,766 miles of roads in 1940, and 9,598 miles of air routes in August, 1939. On July 10, 1941, an undersea railway tunnel linking Shimonoseki on the southern tip of Honshu Island with Moji on the island of Kyushu was holed through. The project, considered important from a military standpoint, took five years and cost 25,000,000 yen. Railways and highways in general were reported to have deteriorated badly during the four-year China struggle. The merchant fleet of steamers on July 1, 1939, comprised 2,337 ships of 5,629,845 gross tons. The amalgamated Tokyo-Yokohama harbor was renamed Keishin Port on May 20, 1941, upon the completion of extensive improvements.

Government. Under the Constitution of Feb. 11, 1889, executive power was vested in the Emperor, acting with the advice and aid of a ministry appointed by and responsible to him, but every law normally required the approval of the Imperial Diet of two chambers. The Upper Chamber (House of Peers) consisted in 1941 of 422 members, of whom 193 were chosen for life on the basis of rank, wealth, and other qualifications and the remainder were elected from and by special groups for seven years. The House of Representatives consisted of 466 members elected for four years. The elections of Apr. 30, 1937, divided the House into two major parties (Minseito, with 175 seats, and Seiyukai, with 172), three minor parties and various independents. The military-Fascist groups gradually extended their control over the government after the invasion of Manchuria in 1931 and in 1940 the transformation of Japan into a completely totalitarian State was initiated. See **YEAR BOOK** for 1940, p. 383 f., and *History* below.

HISTORY

Trail of Aggression. Japan's determined drive for military domination and economic control over the peoples and resources of all eastern Asia and the rich islands of the western Pacific reached a dramatic climax in 1941. On Sept. 18, 1931, the Japa-

nese militarists launched their expansionist program by the invasion of Manchuria. Their attack upon China began July 7, 1937. On Sept. 22, 1940, Japanese troops occupied the northern part of French Indo-China, and on July 23, 1941, the Vichy Government of France, yielding to joint German and Japanese pressure, agreed to Japanese military occupation of all Indo-China (see FRENCH INDO-CHINA under *History*).

Saigon and other strategically located points in southern French Indo-China were rapidly converted into bases for an attack upon the British, Dutch, and American possessions in Malaya and the Western Pacific. The blow fell without warning on December 7, Washington time (December 8, Tokyo time). The Japanese army, navy, and air force simultaneously attacked Hawaii, the Philippines, Wake Island, Guam, Hong Kong, British Malaya, and Thailand. The Thai Government capitulated immediately. Guam surrendered December 11, Wake Island December 24, and Hong Kong the following day. Before the end of December, the oil-producing sections of Brunei and Sarawak in northern Borneo had been occupied by Japanese troops. Manila was facing imminent capture and the Japanese armies were making rapid progress in a drive down the Malay Peninsula toward the great British base of Singapore, key bastion of Allied defenses in southeastern Asia. See WORLD WAR for full account.

The Strategic Background. Japan's bold challenge to the United States and Britain, despite initial military successes, represented an act of desperation stemming from the failure of its militarist ruling clique to conquer China. Another year of costly and bloody warfare had failed to break the military stalemate between Nipponese and Chinese armies (see CHINA under *History*). The acute economic and financial strain imposed by more than four years' fighting in China was undermining Japan's armed strength and the prestige of its military forces. The United States and Britain were extending growing aid to China. Anglo-American support encouraged the Netherlands Indies to reject Japan's demands for their peaceful incorporation into the Japanese politico-economic empire. In mid-June, 1941, Tokyo angrily recalled the economic mission it had sent to Batavia in 1940 (see NETHERLANDS INDIES under *History*).

The Japanese gained substantial economic as well as military advantages through the complete occupation of French Indo-China in July. But the resultant severance of economic relations with Japan by the United States, the British Commonwealth, the Netherlands, and all their possessions brought Tokyo face to face with the threat of national catastrophe. The economic blockade was reinforced by the joint military preparations of all the anti-Axis powers in Eastern Asia and the Western Pacific. Japan had to break this economic and military encirclement, either by diplomatic or military action, or abandon its oft-proclaimed plan for exclusive control of Greater East Asia.

The effort to break out of the trap into which the militarists had led the nation was carried on by means of diplomacy from August through November. Meanwhile Japan rushed preparations for a military showdown in case diplomacy failed. The German attack upon Russia in June and the subsequent withdrawal of large Soviet forces from Siberia to the European fronts facilitated these preparations. Freed from the immediate danger of a Russian attack, the Japanese were able to concentrate most of their forces, except those tied up in China, for a powerful thrust into Malaya and the South

Seas. If they could seize that area, with its abundant oil, tin, rubber, and other rich resources, the Japanese could free themselves in large measure from economic dependence upon the Anglo-American-Dutch world.

When the United States and its associates refused to end the blockade unless Japan first withdrew its troops from French Indo-China and China, the Tokyo militarists struck treacherously and powerfully on December 7. They risked their own fate and that of Japan upon the conquest of Singapore and other key positions in Southeastern Asia before their enemies could mobilize greater military resources in that theater of war. The Japanese also relied upon their Axis partners in Europe to tie up sufficient Allied forces to prevent the timely reinforcement of Allied positions in the Far East.

Negotiations with Russia. Hoping to win a free hand for southward expansion and, if possible, to end Russian aid to China, the Tokyo Government early in 1941 pressed forward with the negotiations for an understanding with Moscow, begun in 1940 (see YEAR BOOK for 1940, p. 382). On January 20 Foreign Minister Matsuoka's efforts secured a renewal of the important Russo-Japanese fisheries treaty for one year, although the Russians exacted a 20 per cent higher price for the Japanese fishing concession in Soviet territorial waters.

During his three-weeks' visit to Berlin, Rome, and Moscow on March 23-April 13, Matsuoka continued negotiations with the Kremlin. On April 13 he obtained Premier Molotov's signature to a pact providing that if either signatory became involved in hostilities with one or several other powers, "the other contracting party will observe neutrality throughout the conflict." The treaty contained a mutual pledge to respect each other's "territorial integrity and inviolability." In an accompanying "frontier declaration" the Soviet Union undertook to respect the territorial integrity and inviolability of Manchoukuo in return for a similar pledge by Japan with respect to the Mongolian People's Republic (Outer Mongolia).

Premier Konoye of Japan greeted this pact as of "epoch-making significance." It lessened the danger of a Soviet flank attack if Japan struck at the Anglo-American positions in southeast Asia. It also released Japan from its obligation under the Tripartite (Axis) alliance of Sept. 27, 1940, to aid Germany in the event of a Soviet-German clash. But Konoye's prediction that it would "serve as a basis for rapid solution" of other outstanding Soviet-Japanese issues was not fulfilled. Moscow declined to reduce its aid to China, grant Japan permanent fisheries rights, or conclude a trade treaty. A Soviet decree of April 29 cut off German shipments of planes, arms, munitions, and other war supplies across the USSR to Japan.

Both Tokyo and Moscow continued their military preparations in Manchoukuo and Siberia, respectively, and there were further minor clashes along the Japanese-Russian frontiers. But in October the progress of the German invasion of Russia forced Moscow to end shipments of war supplies to China and to weaken its Far Eastern army. The early collapse of the Red Army was anticipated. The time seemed ripe for a coordinated Axis offensive against Anglo-American positions throughout the world.

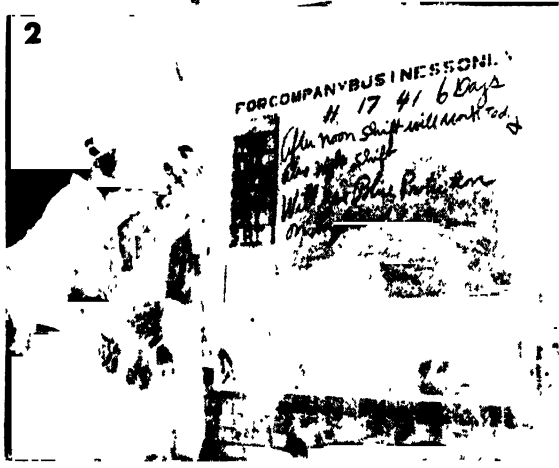
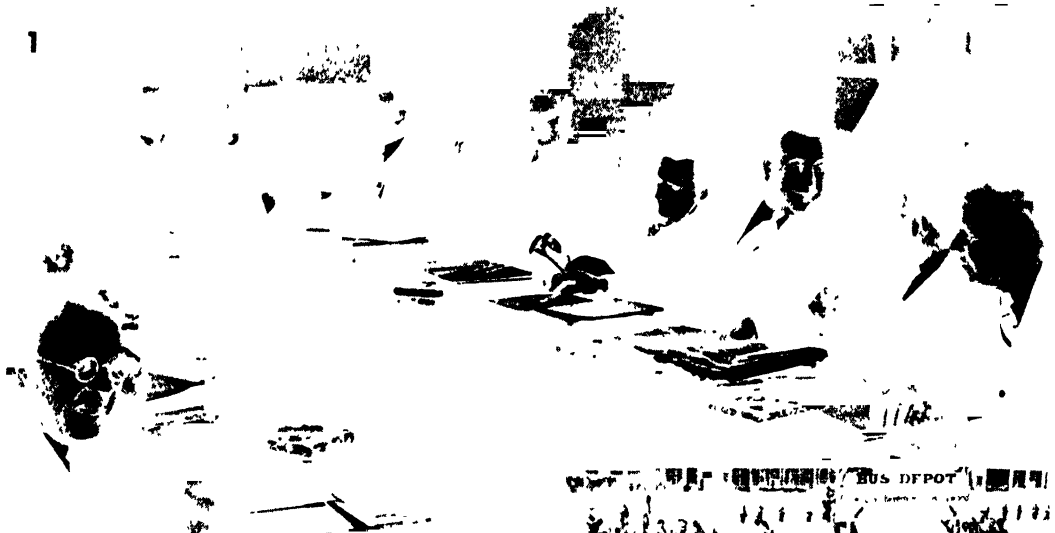
Anglo-American-Japanese Relations. In anticipation of Japanese aggression against their Far Eastern possessions, the Anglo-American-Dutch powers made diplomatic and military preparations to meet it throughout 1941. Besides extending increased financial and military aid to China, Washington and London early in the year began to recall their na-



Photos from Press Association (above) and I N P

JAPAN TIGHTENS AXIS BONDS, DUPLICATES AXIS TECHNIQUES

(1) Foreign Minister Matsuoka, conferring with Hitler in Berlin on March 27, appears with Foreign Minister von Ribbentrop, the Fuehrer, and Japanese Ambassador Oshima (left to right) on the Reichschancellery balcony. The appointment of pro-Axis Lieut. Gen. Eiki Tojo (2) as Premier on October 18 forecast Japan's entrance into the World War. Admitted into Haiphong, French Indo-China, in September, 1940 (3), Japan used it as a base for the occupation of southern French Indo-China in July and of Thailand in December.



(1) An **INDUSTRY-LABOR CONFERENCE** was called by President Roosevelt, December 17, following a series of strikes which jeopardized the defense program. William H. Davis (left) presided. William Green is seen at the right and John L. Lewis at the head of the table. See **LABOR CONDITIONS**. (Press Association Photo)
 (2) In the **CAPTIVE MINE DISPUTE**—miners at Uniontown, Pa., read that police protection would be given those who crossed the picket line. (Wide World)
 (3) In the **NORTH AMERICAN AVIATION STRIKE**—troops pushed back a picket line with fixed bayonets as the plant was taken over by the U.S. Army. (I.N.P.)
 (4) At **AIR ASSOCIATES BENDIX PLANT**—United States troops stood guard until the strike was settled. (I.N.P.)

tionals from the Far East. Successive measures were taken to strengthen the garrisons and fortified defenses of the possessions threatened with attack. In Tokyo these countermeasures aroused both anger and apprehension. Government spokesmen and the Japanese press alternated between threats to drive the white race from Eastern Asia and Oceania and assurances that Japan had no aggressive intentions.

In February the Tokyo Government launched a subtle peace maneuver, apparently with the intention of making both Germany and the Anglo-American coalition bid against one another for Japan's friendship. The offer to mediate between the warring European powers aroused a hostile reception in Berlin and was rejected in London and Washington. But Prime Minister Churchill, apparently feeling that Japan might yet be won away from the Axis, welcomed the opportunity to dispel Anglo-Japanese "misunderstandings." President Roosevelt, by failing to mention Japan in a series of strongly anti-Axis speeches, likewise indicated a desire to conciliate Tokyo. On May 5 American and British oil companies operating in the Netherlands Indies were authorized by their governments to renew for another year their 1940 contract to deliver 1,800,000 tons of petroleum annually to Japan.

Diplomacy failed to prevent a steady increase in tension. On May 25 Japanese troops broke into sealed warehouses in Haiphong, French Indo-China, and seized \$10,000,000 worth of American-owned gasoline and other goods originally destined for China. Washington protested to no avail, and on May 29 it cut off the export from the Philippines to Japan of raw materials needed by the Japanese war machine. Nevertheless negotiations for a settlement of American-Japanese issues, which had been reopened after Admiral Kichisaburo Nomura's arrival in Washington in February as Japanese Ambassador, were continued until the Japanese occupation of southern French Indo-China in July.

Washington thereupon broke off the conversations, and President Roosevelt on July 24 froze Japanese assets in the United States. The British and Dominion governments and the Netherlands Indies followed suit. The effect was to suspend virtually all Japan's trade relations with areas that normally accounted for three-fourths of Japan's foreign trade outside of the yen bloc. Tokyo replied by freezing American, British, and Dutch assets within the Japanese Empire and territories under its control.

Anticipating a Japanese drive into Thailand from French Indo-China, Washington and London early in August issued warnings that such a move would be "a matter of concern." A struggle between Japanese and Anglo-American diplomacy ensued in Bangkok. Until the Japanese invasion in December, Anglo-American representations appeared to have effectively blocked Japanese plans for the peaceful occupation of Thailand (q.v.). On August 24 Prime Minister Churchill announced that if Japan attacked the United States, the British Commonwealth would immediately declare war upon Japan.

Washington Negotiations. At the beginning of August the Japanese Government suggested a meeting of Premier Konoye and President Roosevelt to seek an adjustment of Japanese-American differences. At the same time it urged resumption of the informal diplomatic conversations that had been suspended July 24. President Roosevelt replied August 17 that these proposals were acceptable provided Japan agreed in advance to "embark upon a peaceful program for the Pacific along the lines of the program and principles to which the United States is committed" Japan on August 28 declared it accepted

the program and principles outlined by the President, and gave assurances that it had no intention of using military force against any neighboring nation without provocation.

President Roosevelt then (September 3) asked Japan to accept the following principles as the basis of future Japanese-American relations: (1) Respect for the territorial integrity and sovereignty of all nations, (2) non-interference in the internal affairs of other countries; (3) equality of commercial and other opportunity, (4) non-disturbance of the *status quo* in the Pacific except by peaceful means. The Japanese Premier on September 6 said that he fully subscribed to these four principles, but his statement was qualified and restricted to the southwest Pacific area (not the Pacific as a whole) by the provisions of a peace formula submitted by the Japanese Ambassador in Washington the same day. The formula invoked the right of self-defense to justify Japanese policy in French Indo-China and Thailand, and indicated that Japan could not accept the principle of commercial equality in China where Japan expressed the desire to station troops for an indefinite period.

In a lengthy note of October 2 pointing out the divergence of American and Japanese policy, the State Department urged "a clear-cut manifestation of Japan's intention in regard to the withdrawal of Japanese troops from China and French Indo-China." After further exchanges of proposals and the arrival in Washington of Saburo Kuru, special Japanese envoy, the Japanese Government on November 20 submitted a five-point formula for a mutual understanding. Under this proposal the United States would supply Japan with as much oil as it required, suspend freezing measures, discontinue aid to China, and cooperate with Japan "with a view to securing the acquisition of those goods and commodities which the two countries need in Netherlands East Indies."

In return Japan offered to withdraw its troops from French Indo-China "upon either the restoration of peace between Japan and China or the establishment of an equitable peace in the Pacific area." In the meantime it offered to withdraw its troops from southern French Indo-China to the northern part of that territory upon acceptance of the formula. Finally it proposed a mutual Japanese-United States undertaking not to make any armed advance "into any of the regions in the Southeastern Asia and the Southern Pacific area excepting the part of French Indo-China where the Japanese troops are stationed at present."

The United States on November 26 rejected this proposal as offering no basis for a temporary adjustment much less a peaceful settlement of the issues at stake. Instead it proposed another formula calling for the withdrawal of Japanese forces from China and French Indo-China. This formula proposed mutual Japanese-United States commitments as follows: (1) to conclude a mutual non-aggression pact among the governments principally concerned in the Pacific; (2) to conclude among the same governments an agreement to respect Indo-China's territorial integrity and not to seek preferential economic treatment therein; (3) not to support any government in China other than the Chungking Government; (4) to relinquish extra-territorial and other related rights in China; (5) to negotiate a reciprocal trade treaty; (6) to remove freezing restrictions; (7) to agree upon a plan for stabilizing the dollar-yen rate; and (8) to agree that no agreement previously concluded with third powers be interpreted so as to conflict with the fundamental purpose of the proposed formula. In

drafting this proposal, the State Department consulted and received the approval of the British, Dutch, Chinese, Australian, and New Zealand representatives in Washington.

Japan clearly indicated its attitude on Point 8 of the U.S. formula by signing a five-year extension of the Anti-Comintern Pact in Berlin on November 27 (see GERMANY under *History*). Reports of heavy Japanese troop movements into southern French Indo-China, greatly in excess of the forces authorized by the Vichy-Tokyo accord of July 23, led President Roosevelt on December 2 to ask Tokyo the reasons for this step and "the intention of the Japanese Government." Ambassador Nomura replied December 5 that the reports of Japanese troop movements were exaggerated and that there had been no violation of the Vichy-Tokyo accord. On the afternoon of December 6 President Roosevelt dispatched an appeal to Emperor Hirohito to "give thought in this definite emergency to ways of dispelling the dark clouds." He described the alarm aroused in the United States and elsewhere by Japanese military preparations in Indo-China and declared that the withdrawal of Japanese troops "would result in the assurance of peace throughout the whole of the South Pacific area."

One hour after the surprise Japanese attack of December 7 upon American bases in the Pacific, Ambassador Nomura and Kurusu delivered the Japanese rejection of the American peace formula of November 26. The note accused the United States and Britain of obstructing peace between Japan and China and "interfering with Japan's constructive endeavors toward the stabilization of East Asia." It charged them with "perfecting an encirclement of Japan" which endangered "the very existence of the Empire." The note asserted the U.S. Government "failed to display in the slightest degree a spirit of conciliation" thus blocking progress of the peace negotiation; that it always held fast "to theories in disregard of realities;" and that it was "scheming for the extension of the war."

Japan, the note declared, could not accept the perpetuation of the "dominant position the United States had hitherto occupied not only in China but in other areas of East Asia." The American peace formula "ignores Japan's sacrifices in the four years of the China Affair, menaces the Empire's existence itself, and disparages its honor and prestige." The note continued: "Obviously it is the intention of the American Government to conspire with Great Britain and other countries to obstruct Japan's efforts toward the establishment of peace through the creation of a new order in East Asia, and especially to preserve Anglo-American rights and interests by keeping Japan and China at war." The note concluded that in view of this attitude Japan considered it impossible to reach an agreement through further negotiation.

After reading this note in the presence of the Japanese representatives, Secretary Hull declared: "In all my 50 years of public service I have never seen a document that was more crowded with infamous falsehoods and distortions—infamous falsehoods and distortions on a scale so huge that I never imagined until today that any government on this planet was capable of uttering them."

War Declarations. On the same day (December 7 Washington time) the Japanese Foreign Minister told the American Ambassador in Tokyo that the Emperor had received President Roosevelt's appeal of December 6 and that he desired the Japanese note of December 7 to be regarded as his reply. A proclamation declaring war upon the United States and Great Britain was issued by the Emperor at the

same time. On December 8 the United States Congress and the British Cabinet declared war upon Japan. Their action was followed by similar declarations on the part of Canada, Costa Rica, Dominican Republic, Guatemala, Haiti, Honduras, El Salvador, Panama, Cuba, Nicaragua, the Netherlands, the Netherlands Indies, China, Union of South Africa, New Zealand, Australia, Free France, Poland, and Czechoslovakia. Mexico, Colombia, and Venezuela severed diplomatic relations with Japan and most of the remaining Latin American countries indicated that they would follow suit.

Internal Politics. The decision to stake Japan's future in a war with the United States, Britain, and their allies was taken by the militarists dominating the Tokyo Government only after long deliberation and the elimination from the Government of moderate elements favoring a more cautious expansionist policy. The Diet, which was shorn of virtually all power by the totalitarian reforms of 1940 (see preceding YEAR BOOK), acquiesced in its new status when parliament reconvened in January. The House of Representatives and House of Peers both pledged themselves "to support the government and strengthen swiftly the nation's wartime structure in order to meet the present grave situation." In ensuing weeks they passed without demur a record-breaking budget, a drastic new national defense and security law, and a bill authorizing the Government to "adjust the industrial structure where considered necessary."

The progressive deterioration of Japan's economy and the army's demand for more rigorous control measures led Prince Konoye to reorganize his Cabinet late in March after adjournment of the Diet. He named Masatsumu Ogura, a leading industrialist, as Minister of Wartime Economy Control of the armed forces over the Government was extended by the appointment of Vice Adm. Teigoro Toyoda as Minister of Commerce and Industry and of Lieut. Gen. S. Suzuki as chief of the Planning Board with a seat in the Cabinet. Another army man, General Yanagawa, became active head of the Imperial Rule Assistance Association, the new government party. Beginning April 1 rice and meat were rationed.

The German attack upon Russia, which apparently took the Japanese Government by surprise, placed Japan in a precarious position by forcing the Soviet Union into alliance with Britain and into closer relations with China and the United States. Two weeks of continuous conferences followed in Tokyo, with the Emperor, high military-naval officials, and representatives of political groups participating. The Konoye Cabinet was then reorganized again (July 18). Foreign Minister Matsuoka, outstanding advocate of cooperation with the Axis, was replaced by Vice Admiral Toyoda. Baron Hiranuma, leading advocate of Fascist policies, assumed the new post of Vice Premier. Four army generals strongly represented the expansionist views of the armed forces. Observers concluded that the Government would henceforth strive to win Japan's long-proclaimed objective of domination in East Asia with less dependence upon advice from Berlin. The move into southern French Indo-China followed immediately afterward.

The economic embargo to which Japan was soon subjected had quick and drastic internal repercussions. The country was placed on a full war footing, while the most strenuous efforts were made to mobilize and ration economic resources. At the same time the Cabinet and other ruling circles were sharply divided over Japan's policy toward the United States. As usual, the extremist military-naval elements, who demanded that Japan push

ahead with its program of southward expansion in defiance of the opposing coalition, had their way. Baron Hiranuma was severely wounded by a would-be assassin, apparently because he counseled moderation. Prince Konoye was reported to have defied extremist sentiment in reopening the Washington negotiations in August.

As the German drive into Russia gained momentum, the Tokyo extremists became louder in their demand for calling off the Washington discussions unless the United States receded from its position. Dissension in the Cabinet over "the manner of executing national policy" reached a head in mid-October. After Prince Konoye had conferred with the Emperor and leading statesmen, the entire Cabinet resigned on October 16. That the extremists had carried the day was manifest in the composition of the new Government formed October 18 by the incumbent War Minister, Gen. Eiki Tojo, an ultra-nationalist of strongly pro-Axis leanings. Against precedent and statutory law, General Tojo was permitted to remain in active military service while concentrating in his hands the powers of Premier, War Minister, and Home Minister—the latter office controlling the police. He thus assumed many of the aspects of a military dictator. Other leading members of the new Government were Foreign Minister Shigenori Togo, former Ambassador to Moscow and Berlin; Finance Minister Okinobu Kaya, a pro-army bureaucrat, Cabinet Secretary Naoki Hoshino, and Minister of Commerce and Industry Shinsuke Kishi.

Formation of the Tojo Government increased the tension in the Pacific. The new Premier again proclaimed Japan's determination to bring China to terms and establish domination in East Asia. Early in November he ordered Saburo Kurusu, the diplomat who signed the Tripartite Alliance in 1940, to Washington to aid Ambassador Nomura in the negotiations. Later indications were that Kurusu was sent to spin out the discussions and allay American suspicions until Japan was ready to strike. However Japanese spokesmen and official organs gave frequent warning that Japan's patience was reaching the point of exhaustion and that Washington was being given "a last opportunity to make amends for past aggression." After hearing the Premier declare that "the government has completed all necessary preparations and has anticipated every possible obstacle," a special session of the Diet (November 15-20) formally demanded a firm foreign policy.

On November 29 Premier Tojo publicly declared that American and British exploiters of Asiatic peoples "must be purged with a vengeance." On December 2, when submarines and other units of the Japanese fleet were secretly en route to their positions for the surprise attack upon Hawaii, the Tokyo Cabinet announced its decision to continue the Washington negotiations.

See AUSTRALIA, BRAZIL, BRITISH MALAYA, CHINA, ECUADOR, FRANCE, FRENCH INDO-CHINA, GERMANY, GREAT BRITAIN, MONGOLIA, NETHERLANDS, NETHERLANDS INDIES, NEW ZEALAND, PERU, UNION OF SOVIET SOCIALIST REPUBLICS, and VENEZUELA, under *History*; ARCHITECTURE; BIRTH CONTROL; CHEMISTRY, INDUSTRIAL; ENEMY ALIENS; FASCISM; NAVAL PROGRESS; NEWSPAPERS AND MAGAZINES; PAN AMERICANISM; SEISMOLOGY; UNITED STATES under *Foreign Affairs*; WORLD WAR.

JAPANESE BEETLE. See ENTOMOLOGY, ECONOMIC; ZOOLOGY.

JAPANESE PACIFIC ISLANDS (NANYO). The former German possessions in the North Pacific, mandated

to Japan at the close of the World War. There are three main groups of islands: (1) MARIANA or LADRONE (14 islands), including Saipan, Tinian, Rota; (2) CAROLINE (577 islands), including Yap, Palau, Korror, Spring, Wednesday, Ponape, Kusaie; (3) MARSHALL (60 islands), including Jaluit. Total area, 830 square miles; population (October, 1940, census), 131,157. Sugar, maize, phosphates, tapioca, bananas, coffee, yams, alcohol, bauxite, and copra are the main products. It was announced during 1941 that the island of Palau would be able to supply enough bauxite to meet 75 per cent of Japan's aluminum requirements. The reserves of the Palau bauxite deposits were estimated at 10 million tons. Trade (1937): Y23,265,000 for imports and Y38,252,000 for exports (yen averaged \$0.2879 for 1937) Budget (1940): Y10,941,000 for revenue and Y10,839,000 for expenditure (yen averaged \$0.2344 for 1940).

These islands were fortified by the Japanese and converted into naval and air bases in violation of the provisions of the League of Nations mandate and the Nine-Power Treaty. From them was launched the surprise Japanese attack of Dec. 7, 1941, on Hawaii. See WORLD WAR.

JARVIS ISLAND. A mid-Pacific island (0° 23' S. and 159° 54' W.), south of Hawaii and owned by the United States. The island lies in the path of the main steamship lanes and the Pan American Airways route from Honolulu to New Zealand and Australia. In former years guano was produced from the island but it remained uninhabited for a number of years until 1936 when the U.S. Department of the Interior set up an aerological station (see YEAR BOOK for 1936).

JAVA. See NETHERLANDS INDIES under *Area and Population*.

JEBEL DRUZE. Same as *Djebel Druze* (q.v.) under SYRIA AND LEBANON.

JEHOL. See CHINA under *Area and Population*.

JEWELRY. See FASHION EVENTS

JEWISH CONGREGATIONS. The census of 1937, together with supplementary data published by this writer in the *American Jewish Year Book*, shows that there are 3,728 permanent Jewish congregations in the United States, located in nearly 1,000 cities and villages in the 48 states. A total of 4,641,000 Jews reside in these places and 130,000 Jews reside in adjacent cities and villages without congregations. During the last ten-year period for which statistics are available, the Jews of the United States increased barely 13 per cent, while the number of Jewish congregations grew almost 20 per cent. In nearly 100 small cities and villages Jewish congregations were organized for the first time during the ten-year period.

Nearly 105,000 Jewish children now receive religious instruction in 1,030 Sabbath schools maintained by the Jewish congregations. In addition, weekday religious instruction, in after public school hours, is given to an additional 85,000 Jewish children. The number of Jewish parochial schools are few, and barely 4,000 Jewish children are enrolled in these schools.

The past ten years witnessed a great increase of permanent synagogue buildings. A total of 2,850 Jewish congregations now own their synagogue buildings, compared with 1,780, ten years ago. The value of the buildings, however, decreased. In 1927, a total of 1,135 congregations valued their synagogues at \$97,400,000 or an average of \$85,815 per synagogue building; while in 1937, a total of 2,025

congregations valued their synagogues at \$123,284,000, or an average of \$60,910. The decrease in value was no doubt influenced by the fact that real estate values were lower in 1937 than in 1927.

A total of 2,060 congregations reported that they spent during the year of the census \$14,404,000 or an average of \$6,670 per congregation. These current expenditures included \$2,560,000 for rabbis' salaries, \$787,000 for repairs and improvements, \$830,000 payment on congregations debt, while the remainder was spent by the congregations for worship, religious instruction, charity, and other religious activities. Salaries for rabbis thus constituted 18 per cent of the total expenditures of the congregations; payment on congregational debts, 6 per cent; and repairs and improvements, 5 per cent.

Several thousand Jewish societies are affiliated with the 3,730 congregations. These include educational societies and study circles, youth societies, brotherhoods, sisterhoods, loan funds, and numerous other types of charitable societies. A portion of the 4,000 congregations are affiliated into national federations, each of which aims to meet certain needs, such as the publication of textbooks for religious schools, which must be met on a nation-wide scale. The largest of these federations is the Union of American Hebrew Congregations which has 307 member congregations.

H. S. LINFIELD.

JEWISH WELFARE BOARD. Organized Apr 9, 1917, the Board has a twofold purpose. It is the parent body for Y.M.H.A.'s, Y.W.H.A.'s and Jewish Community Centers in the United States and Canada. It also provides for the religious and welfare needs of men in the service of the U. S. Army, Navy, Marine Corps, disabled veterans, young men in CCC camps. The Board is composed of 325 constituent societies in the United States and Canada, which have 425,000 members. Seven regional organizations are affiliated in its work.

The Board works in the fields of Jewish Center problems relating to programs of activities and administration, vocational guidance, educational and recreational activities, cultural and social adjustment of immigrants, community surveys and institutional studies, club leadership training, summer and day camps, health and physical education, extension education, forums and lectures, and maintains a field service in contact with its affiliate organizations.

The Jewish Welfare Board is one of six organizations of the United Service Organizations for National Defense (q.v. under SOCIETIES), cooperating with the Y.M.C.A., Y.W.C.A., National Catholic Community Service, National Travelers Aid Association, and Salvation Army. In this connection, its activities are conducted on a nonsectarian basis.

The army and navy committee of the Board, John M. Schiff, chairman, serves men of Jewish faith in the Army, Navy, and Marine Corps and in the national defense service. The committee on religious activities, Rev. Dr. David de Sola Pool, chairman, assumes responsibility for religious services to Jewish men in the national defense. The Board, through the Jewish Community Centers affiliated with it and through community committees, plans activities in the several communities for men in the defense service.

The officers of the Board are: Irving Lehman, Honorary President; Frank L. Weil, President; Lloyd W. Dinkelspiel, Mrs. Felix M. Warburg, and Mrs. Walter E. Heller, Vice-Presidents; Frederick L. Ehrman, Treasurer; Joseph Rosenzweig, Secretary; and Louis Kraft, Executive Director. The

headquarters are at 220 Fifth Avenue, New York City.

JEWIS. See REFUGEES; DOMINICAN REPUBLIC; FRANCE, GERMANY, ITALY, NETHERLANDS, PALESTINE, POLAND, RUMANIA, SLOVAKIA, under *History*. For Jewish Activities in the United States see JEWISH CONGREGATIONS OF THE U.S.; JEWISH WELFARE BOARD; groups listed under SOCIETIES, as *Jewish Women, Inc., National Council of, ORT, Zionist Organization of America; Zonta International.*

JOHNSTON ISLAND. A coral island in the central Pacific (16° 13' N. and 169° 50' W.), southwest of Hawaii, belonging to the United States and under the jurisdiction of the Navy Department. In 1939 Congress appropriated funds for the establishment on the island of a naval air base and submarine base. A channel was cut through the barrier reef and coral heads were removed from the lagoon to permit entrance of seaplane tenders and submarines and the landing of seaplanes. In March, 1941, Congress voted an additional sum of \$6,935,500, almost evenly divided between Johnston and Palmyra (q.v.) islands, for the construction of landplane runways and additional aviation facilities. Effective May 15, 1941, the island was designated a "naval defensive sea area" and unauthorized vessels and aircraft were forbidden to approach within three miles. The newly completed naval air station at Johnston Island was commissioned Aug 15, 1941. In December the installations were attacked by Japanese ships and planes.

JOHORE. See BRITISH MALAYA
JOINT DEFENSE BOARD, JOINT ECONOMIC COMMITTEES, JOINT MATERIALS COORDINATING COMMITTEE. See CANADA under *History*
JOURNALISM. See NEWSPAPERS AND MAGAZINES.
JUGOSLAVIA. See YUGOSLAVIA.
JUNIOR COLLEGES. See UNIVERSITIES.

JUSTICE, U.S. Department of. See FEDERAL BUREAU OF INVESTIGATION. For Bureau of Prisons, see PRISONS. For Immigration and Naturalization Service, see IMMIGRATION. The Attorney General in 1941 was Francis Biddle.

JUTE. See CHEMISTRY, INDUSTRIAL under *India*.
JUVENILE BOOKS. See LITERATURE, ENGLISH AND AMERICAN under *Juvenile*.

JUVENILE DELINQUENCY. The actual extent of juvenile delinquency in the United States cannot be measured by data available at present. Juvenile-court statistics are affected materially by such factors as the availability of social resources for dealing with problems of behavior without court action, the place of the court in the child-welfare program of the community and its relationship to other agencies, community attitudes toward certain types of offenses, the legal age jurisdiction of the court, and techniques used in handling behavior problems by the police and school. However, in the absence of community-wide statistics of delinquency cases, such data as are available for court cases have considerable value in helping to state the problem. For the year 1940, 514 juvenile courts serving areas representing 38 per cent of the total population of the United States reported to the Children's Bureau of the U.S. Department of Labor 82,821 delinquency cases. From these figures it is estimated that approximately 200,000 different children yearly come to the attention of juvenile courts because of delinquency. The problem is, therefore, a serious

one numerically, particularly because juvenile court records show only a portion of the total number of children with behavior problems. Moreover, there is ample indication that adult crime has its earlier manifestations in juvenile delinquency and failure to develop satisfactory social relations.

In recent years there has been a growing awareness of the relationship between juvenile delinquency and the environment—home, school, and community—in which the child is growing and developing. Recent years have witnessed also a growing amount of interest among such professional groups as psychiatrists, social workers, sociologists, and psychologists. As a result there is now a considerable and growing understanding of the reasons that make particular children delinquent and of ways of treatment that give promise of improvement in individual cases, and may help to prevent delinquency in others.

Less emphasis is being placed upon specialization in the individual categories and more emphasis is being placed upon the importance of strengthening basic services for all children. Two major social-service concepts of interest in this respect are receiving increasing acceptance. One concept stresses the importance of keeping the child in his own home whenever possible; the other, which has changed the pattern of social service in the past few decades, stresses individualization of treatment and recognizes that each child may need something different from what is needed by any other child and that the unit of interest should be the *child* rather than the group or the institutional population. Thus all agencies dealing with children have sought or have been urged to give individualized case-work services to children, and the terms "orphan," "dependent," "neglected," and "delinquent" have come to carry less and less significance. These terms are not mutually exclusive. A neglected child, for example, may also be delinquent or may become delinquent because of neglect.

The number and kind of social services for children have increased rapidly in recent years, but the greatest impetus to this movement came in 1935 with the passage of the Social Security Act Part 3 of title V of the act, as amended, authorizes an annual appropriation of \$1,510,000 for grants to States for child-welfare services for the purpose of enabling the United States, through the Children's Bureau (q.v.), to cooperate with State public welfare agencies in establishing, extending, and strengthening, especially in predominantly rural areas, welfare services for the protection and care of homeless, dependent, and neglected children, and children in danger of becoming delinquent.

Some delinquency, it must be recognized, has a psychopathological origin. Child-guidance clinics for children, which had their beginning with juvenile courts, are now widely used by the community for the treatment of conduct problems which might lead to delinquency. These clinics generally have the services of a psychiatrist, a psychologist, and of psychiatric social workers. In many cities child-guidance service is available, but most small towns and rural areas are without these resources. However, encouraging experiments in extending such facilities to rural areas are being made, chiefly through the stimulation of public and child-welfare services by Federal funds under the Social Security Act. At present there are some 700 psychiatric clinics for children in operation in the United States under both private and public auspices.

The school also has an important place in the prevention and treatment of social problems of children. Its primary responsibility is the organiza-

tion of an educational program which is sufficiently flexible to meet individual needs. In cities the employment of social workers by the school offers a promising means of discovering and dealing with the social problems of children at an early stage. This service is utilized in many cases as an aid in adjusting the school program to the needs of the individual child. For extended treatment these workers have to depend largely upon the organized social-welfare resources of the community. In many rural areas social service needed in relation to school children is being provided by the public welfare agency.

Because the attitudes and understandings of parents greatly affect the behavior of their children, attention is being focused more and more upon developments in the field of parent education. During recent years particularly, much research has been devoted to principles of mental hygiene and habit training as well as the general aspects of child care. The results of modern research are being made available in easily understandable form to many parents through literature and radio talks on child care, guidance, and training offered by the Children's Bureau and other agencies and organizations; through parent-education programs conducted in colleges and schools, and through child-study groups and mothers' classes.

Recreation has long been recognized as a normal part of the life of the individual and as such has many inherent possibilities for the prevention of delinquency. Organized groups under private auspices such as the Boy Scouts, the Girl Scouts, the Camp Fire Girls, the Girl Reserves, clubs operated in connection with churches, young men's and young women's associations, boys' clubs, and the like play an important part. In recent years public responsibility as represented in local, county, State and national parks, school and municipal playgrounds and, more recently, the recreation projects of the Work Projects Administration (q.v.) have helped to give recreation a significant place in the total educational enterprise. Desirable types of commercialized recreation are a normal and essential part of community life. The importance of full-time year-round leadership in recreation is receiving more recognition than in the past. The total number of such leaders employed in 1940 was greater than in any other previous year. Nevertheless, existing recreational facilities still lag far behind actual needs in most communities.

The effect of undesirable community influences on children and immature youths has led some of the traditional agencies for dealing with delinquents to modify their practices and to develop protective services. Many police departments have developed crime prevention departments for the purpose of dealing with cases in which children are involved either as offenders or as victims, dealing with conditions dangerous to youth, and patrolling public places and supervising commercial amusement. In addition to police departments, several public and private children's organizations such as child-welfare agencies, children's aid societies, juvenile protective associations, and societies for the prevention of cruelty to children, often make protective work a major function.

In many respects the line of demarcation between prevention and treatment is very thin, if it exists at all. In many cases, for example, delinquency is prevented through the treatment service of the child guidance clinic, child welfare services, and social agencies providing services to families. In the main, however, the agencies upon which the State traditionally has placed responsibility for the

treatment of juvenile delinquency are the juvenile courts (see 1940 YEAR BOOK) and the training schools (see 1940 YEAR BOOK).

Although there is now a considerable and growing understanding of ways of treatment that gives promise of improvement in individual cases, the methods of work and facilities of agencies dealing with delinquent children have frequently lagged far behind scientific knowledge concerning child behavior. In the treatment programs of training schools, for example, the provisions for medical and mental health services, recreational and leisure-time activities, and educational, vocational, and spiritual guidance and training vary greatly as to adequacy and character and in the ways in which they are used. There is now, however, considerable evidence of much interest among training-school administrators in developing standards and improving practices in the training school. Two professional associations are active, the National Conference of Juvenile Agencies and the National Association of Training Schools, whose published proceedings of annual conferences cover a wide range of interests. Since 1937 the Children's Bureau has had an Advisory Committee on Training Schools for Socially Maladjusted Children composed of training-school administrators and representatives of closely allied fields. Efforts now are being made to define the function and place of the training school in the child-welfare field. The fact that practice has not kept pace with established knowledge is not unique, of course, to the training school. Similar lags are noticeable to varying extents in many other fields. Good signs of progress in any field, however, are increased awareness of the lag between knowledge and practice and efforts to lessen the gap between the two.

Among newer methods that are applicable to the treatment of behavior problems is one that has not yet been put into widespread practice although experience to date has shown the value of the work with certain individual characteristics and with various types of social maladjustment. The new technique, group work, may be defined as an educational process emphasizing: (1) The development and social adjustment of an individual through voluntary group association; and (2) the use of this association as a means of furthering other socially desirable ends. (See Newstetter, W. I., "What is Social Group Work?" *Proceedings of the National Conference of Social Work*, 1935, p. 291. The University of Chicago Press, Chicago, 1935.)

By accepting the individual approach and voluntary association, group work contributes to the treatment of delinquency in three ways: (1) By recognizing purpose or feeling on the part of the child and adolescent; (2) by providing adequate programs to meet the special needs of maladjusted or delinquent children; and (3) by acting as part of the treatment process involving the services of case work and group work.

Group work is not identified with any particular agency, public or private; rather it is a specialized resource, a technique that can be used by many different agencies in a variety of fields. The fact that the method requires the services of a psychiatrist and of a group leader especially trained to deal with emotional difficulties of children has resulted in limiting this treatment to relatively few agencies or organizations. Although not yet widely in use, group therapy offers, besides the service to the individual, an opportunity for further study and exploration in respect to group activities generally.

A very pertinent question at the present time is

whether the war will bring about an increase in juvenile delinquency. During the past year observations of persons visiting defense areas in the United States have indicated that there are some evidences of increase in the areas in which the stresses and strains of the defense program have stepped up the tempo of living. These indications together with the experience of this and other countries during the last world war, and the experiences of England and Canada during the present war point to the fact that increases in juvenile delinquency must be anticipated and that preventive and remedial measures will need to be strengthened greatly. See *PSYCHOLOGY under Social Psychology; PRISONS, PAHOLE, AND CRIME.*

KATHARINE F. LENROOT.

KANSAS. A west north central State Area: 82,276 sq. mi., including 163 sq. mi. of inland water. Population: (1940 census) 1,801,028. The urban population comprises 41.9 per cent of the total (U.S. average, 56.5 per cent); non-white population, 3.7 per cent (U.S. average, 10.2), elderly (65 years and over), 8.5 per cent. Kansas ranks 13th among the States in area, 29th in population, and 36th in density, with 21.9 persons per square mile. The capital is Topeka with 67,833 inhabitants, largest city, Kansas City, 121,458. There are 105 counties and 20 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to George L. McClenney, Superintendent of Public Instruction, there were 365,970 pupils enrolled in the public schools of Kansas during the school year 1939-40, 254,017 in elementary schools and 111,953 in secondary schools. Teachers numbered 18,944. Total expenditures for the year were \$31,121,132.77.

Transportation. State highway mileage in 1939, including streets under State control, totaled 9,864, of which 9,115 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 584,380; 480,002 were private and commercial automobiles, 233 busses, and 102,433 trucks and tractor trucks. Gross motor-fuel consumption was 503,586,000 gallons. Net motor-fuel tax receipts were \$10,562,000, the rate being three cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$4,012,000.

Railways of all classes extended 8,664 miles (Dec. 31, 1939) 3.69 per cent of the total mileage in the United States. Class I steam railways (8,538 miles) reported 13,039,508 tons of revenue freight originating in Kansas in 1940 and 8,684,397 tons terminating in Kansas. There are 41 airports and landing fields in the State (15 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 493 civil aircraft in the State and 2,019 commercial and private pilots (1,814 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 22,313,300, as compared with 19,684,600 acres in 1940. According to the latest census, there are 156,327 farms, valued at \$1,421,387,464, averaging 308.2 acres each. Farm population numbered 606,099 or 33.7 per cent of the total. Leading crops with production were: Wheat, \$164,665,000, 173,332,000 bu.; corn, \$39,485,000, 57,224,000 bu.; sweet sorghums, \$15,023,000, 4,173,000 tons; oats, \$13,114,000, 36,423,000 bu.; hay, \$13,077,000, 2,221,000 tons; grain sorghums, \$12,749,000, 24,055,000 bu.; barley, \$10,187,000, 28,120,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 1,494 manufacturing establishments in Kansas, employing 31,614 wage earners who received \$36,938,032 in wages for the year. Total value of products was \$464,353,506; value added by manufacture, \$118,952,470.

Mineral Production. Leading mineral products in 1940 were (with 1939 figures in parentheses): Petroleum, 66,270,000 barrels (60,703,000 barrels valued at \$63,100,000); natural gas, 1940 figure not available (80,556,000 M cubic feet valued at \$29,356,000 in 1939), cement, 3,441,612 barrels, \$5,192,160 (3,746,370 barrels, \$5,614,112); coal, 1940 figure combined with Missouri, 6,736,000 net tons (1939 figure for Kansas alone, 2,920,000 short tons valued at \$5,490,000). The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$123,391,521 or 2.91 per cent of the total for the United States. Kansas ranks eighth among the States in value of minerals produced.

Trade. According to the 1940 census there were 5,130 wholesale establishments in Kansas, employing 14,997 persons, reporting net sales for 1939 of \$427,651,000 and annual pay roll of \$18,163,000. There were 27,545 retail stores with 56,490 employees, reporting sales of \$473,551,000 and pay roll of \$42,510,000. Service establishments numbered 10,047, employing 10,191 persons for \$6,990,000 per year, and reporting a business volume amounting to 30,397,000. The leading business center of the State is Wichita which reported wholesale sales of \$69,574,000, retail sales of \$53,243,000, and \$4,704,000 receipts for its service establishments. Kansas City reported sales of \$39,719,000 wholesale and \$35,111,000 retail, Topeka, \$19,730,000 and \$31,633,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Kansas was \$33,332,000. Under the Social Security program, financed by Federal funds matching State grants, 28,885 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$19.38 (U.S. average pension, \$21.08); 15,634 dependent children in 6,610 families received average monthly payments of \$29.05 per family (U.S. average, \$32.73), and 1,402 blind persons received \$20.62 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 12,186 and received \$14.70 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 1,978 (\$131,000), NYA student work program, 5,179 (\$25,000); NYA out-of-school work program, 5,770 (\$114,000); WPA, 20,280 (\$1,092,000); other Federal emergency projects, 14 (\$2,000); regular Federal construction projects, 5,301 (\$582,000). The Farm Security Administration certified subsistence payments totaling \$14,000 for the month to 497 cases.

Legislation. The Legislature convenes in regular session on the second Tuesday of January in odd years. It is composed of 40 Senators (5 Democrats and 35 Republicans in 1941) and 125 Representatives (27 Democrats, 97 Republicans, and one vacancy). The following is a synopsis of the more important laws enacted by the Legislature in 1941, prepared by Fred E. Gulick, Assistant Revisor of Statutes.

Abstractors. Business of abstracting land titles regulated. **Apportionment:** State apportioned into six congressional districts. **Civil Service:** State system of civil

service instituted and state department of civil service created.

Corporations (1) Speculative securities act (Blue-sky law) amended to exempt certain securities and transactions from provisions thereof. (2) Seventeen sections of corporation code, originally enacted in 1939, amended for clarification and corporate succession permitted for one hundred years. (3) Procedure for withdrawal of foreign corporations from state provided and certain former withdrawals ratified. (4) Procedure for corporate conveyances of land prescribed. (5) Special act for incorporation of electric cooperative, nonprofit, membership corporations enacted. (6) Special act for incorporation for mutual nonprofit hospital service corporations enacted.

Education (1) State wide contributory system for payment of retirement annuities to school teachers and employees established. (2) School code study by Legislative Council commenced in 1939 authorized to be continued.

Elections Communist party barred from elections.

Insurance Sale of industrial life insurance regulated. See, also (6) under subject *Corporations Interstate Compacts*. Republican River compact relating to use of waters thereof ratified. *Interstate Cooperation* Commission on interstate cooperation created. *Irrigation* General act for organization and operation of irrigation districts enacted. *Itinerant Merchants* Itinerant merchants regulated, licensed and taxed. *Labor* Unemployment compensation act completely revised and merit rating of employers advanced to Jan 1, 1941. *Local Government* Creation of sewage districts in townships having public water supply authorized. See, also, (1), (3), and (5) under *Taxation*. *Monopolies and Unfair Trade* Unfair practices act enacted to prohibit unfair sales and unfair trade practices by retailers and wholesalers. *National Defense* Provision made for the establishment of state and local councils of defense. *Oil and Gas* Interstate oil and gas compact extended to Sept. 1, 1943. *Public Health* Barber-shop business regulated and fixing of minimum prices for barber services authorized.

Social Welfare (1) Act providing for recovery of assistance given from recipient repealed. (2) Special old age assistance fund created to increase grants. (3) Special social welfare equalization fund created to ease burdens of counties having exceptionally high social welfare expenses.

Taxation (1) Political subdivisions authorized to consummate agreements for payment of sums in lieu of taxes by the United States. (2) Inheritance tax law completely revised. (3) Tax limitation law applying to all political subdivisions completely revised. (4) New procedures established for sale of real estate for taxes and judicial foreclosure of tax delinquent real estate required. (5) Budget law applying to all political subdivisions amended and revised. (6) Special fuel use tax law enacted taxing all fuels used to propel motor vehicles except fuels taxed under motor vehicle fuel tax law (gasoline tax). (7) New law taxing cereal malt beverages and malt products permits wholesalers within or without state to pay tax and affix stamps or crowns evidencing payment of tax. (7) Grain dealers and producers subjected to license tax based on number of bushels handled or produced and grain exempted from ad valorem taxation. (8) Permanent annual state tax levy provided to raise funds for buildings at state educational institutions. (9) Tax code study by Legislative Council commenced in 1939 authorized to be continued.

Finances. Total tax collections in Kansas for the fiscal year ending in June, 1941, were \$45,137,000 (1940: \$43,352,000). Total sales taxes amounted to \$24,123,000, including general sales, \$11,189,000, motor fuel, \$10,831,000. Taxes on specific businesses ran to \$3,835,000, general and selective property, \$4,997,000, unemployment compensation, \$4,863,000. The net income taxes were \$2,456,000. Cost payments for the operation of general government totaled \$36,902,000 in 1939, the latest year available. (Revenues for the general government for that year were \$52,416,000.) Cost of operation per capita was \$20.42. Total gross debt outstanding in 1941 was \$16,884,000, as compared with \$23,410,000 in 1932.

Officers and Judiciary. The Governor is Payne Ratter (Rep.) inaugurated in January, 1941, for his second two-year term; Lieutenant Governor, Carl E. Friend; Secretary of State, Frank J. Ryan; Attorney General, Jay S. Parker; State Treasurer, Walter E. Wilson; State Auditor, George Robb. Chief Justice of the Kansas Supreme Court is John S. Dawson; there are six associate members elected for six-year terms. See FLOODS; PLANNING.

KANSU. See CHINA under *Area and Population*.

KARAFUTO. The Japanese part (south of 50° N.) of Sakhalin island, separated from Japan by the strait of La Pérouse. Area, 13,935 square miles; population (census of October, 1940), 414,891. Chief towns (Jan. 1, 1938 populations): Toyohara, the capital, 37,365; Esutoru, 31,959; Shikka, 24,399; Otomari, 24,269. Timber, paper, fish, coal, and petroleum are the main products. Trade (1937): Y59,403,628 for imports and Y121,372,966 for exports (yen averaged \$0.2879 for 1937; \$0.2344, 1940). Budget (1940-41): Y66,971,457.

KAZAKH SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

KEARNEY STRIKE. See LABOR CONDITIONS under *Strikes*.

KEDAH. See BRITISH MALAYA.

KEEWATIN. See NORTHWEST TERRITORIES.

KELANTAN. See BRITISH MALAYA.

KENTUCKY. An east south central State. Area: 40,395 sq. mi., including 286 sq. mi. of inland water. Population: (1940 census) 2,845,627. The urban population comprises 29.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 7.5 per cent (U.S. average, 10.2); elderly (65 years and over), 6.6 per cent. Kentucky ranks 36th among the States in area, 16th in population, and 15th in density, with an average of 70.9 persons per square mile. The capital is Frankfort with 11,492 inhabitants; largest city, Louisville, 319,077. There are 120 counties and 13 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education, there were 618,318 pupils enrolled in the State School System during the school year 1937-38. Of this total, 526,807 were enrolled in kindergartens and elementary schools and 91,511 in secondary schools; 45,629 were in separate Negro schools. The instructional staff comprised 18,860 persons, who received an annual salary of \$835 (U.S. average: \$1,374), 4,648 or 26.5 per cent were men. Expenditures for all public schools in 1937-38 were \$23,826,391, making a total cost per capita of \$8.04 (U.S. average: \$17.15). School buildings (1936 count) numbered 7,592; there were 4,387 one-room, one-teacher schools (1938). The value of public property used for school purposes was \$74,602,534. For higher education, see under *Kentucky* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 9,415 of which 9,143 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 470,825; 387,068 were private and commercial automobiles, 768 busses, and 75,891 trucks and tractor trucks. Gross motor-fuel consumption was 305,334,000 gallons. Net motor-fuel tax receipts were \$14,717,000, the rate being five cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$5,509,000.

Railways of all classes extended 3,691 miles (Dec. 31, 1939) 1.57 per cent of the total mileage in the United States. Class I steam railways (2,551 miles) reported 44,882,146 tons of revenue freight originating in Kentucky in 1940 and 11,565,221 tons terminating in Kentucky. There are 19 airports and landing fields in the State (four lighted

fields) and one seaplane base. On July 1, 1941, according to the Civil Aeronautics Authority, there were 167 civil aircraft in the State and 508 commercial and private pilots (438 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 5,209,500, as compared with 5,156,800 acres in 1940. According to the latest census, there are 252,894 farms, valued at \$775,-494,098, averaging 80.2 acres each. Farm population numbered 1,262,943 or 44.4 per cent of the total. Leading crops with production were: Tobacco, \$73,477,000, 307,375,000 lb.; corn, \$58,-464,000, 73,080,000 bu.; hay, \$20,762,000, 1,815,000 tons; wheat, \$7,481,000, 7,125,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 1,640 manufacturing establishments in Kentucky, employing 62,791 wage earners who received \$61,902,354 in wages for the year. The total value of products was \$481,029,-771; value added by manufacture, \$187,400,426.

Mineral Production. Leading mineral products include: Coal, of which 39,732,000 net tons were produced in Eastern and 8,668,000 in Western Kentucky in 1940 (total for 1939, 42,805,000 short tons valued at \$74,481,000); natural gas, 47,771,000 M cubic feet valued at \$20,630,000 in 1939, petroleum, 5,193,000 barrels in 1940 (5,621,000 barrels valued at \$5,900,000 in 1939). The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$113,243,154 or 2.67 per cent of the United States total. Kentucky ranks eleventh among the States in value of minerals produced.

Trade. According to the 1940 census there were 2,174 wholesale establishments in Kentucky, employing 19,499 persons, reporting net sales for 1939 of \$464,432,000 and annual pay roll of \$23,671,000. There were 30,919 retail stores with 55,062 employees, reporting sales of \$520,135,000 and pay roll of \$46,090,000. Service establishments numbered 9,364, employing 13,385 persons for \$9,760,000 per year, and reporting a business volume amounting to \$34,093,000. The leading business center of the State is Louisville which reported wholesale sales of \$215,936,000, retail sales of \$131,004,000, and \$12,266,000 receipts for its service establishments. Covington reported sales of \$9,392,000 wholesale and \$21,627,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Kentucky was \$36,312,000. Under the Social Security program, financed by Federal funds matching State grants, 57,806 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$8.94 (U.S. average pension, \$21.08), and an estimated 1,370 dependent children in 430 families received (without Federal aid) an approximate total payment of \$17,000. General relief cases, which are supported by State and local funds only, numbered approximately 5,000 and received an estimated total payment of \$44,000.

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 7,563 (\$501,000); NYA student work program, 2,702 (\$25,000); NYA out-of-school work program, 7,421 (\$159,000); WPA, 29,148 (\$1,390,000); regular Federal construction projects, 10,044 (\$1,187,000). The Farm Security Administration certified subsistence payments totaling \$32,000 for the month to 401 cases.

Legislature. The General Assembly convenes in regular session on Tuesday after the first Monday

of January in even years. (There was no session in 1941.) It is composed of 38 Senators (29 Democrats and 9 Republicans in 1941) and 100 Representatives (72 Democrats and 28 Republicans). The President of the Senate is Rodes K. Myers; President Pro Tem, Edwin C. Dawson; Speaker of the House, B. F. Shields.

Elections. Two measures were submitted to the vote of the people in 1941 and both were passed. Use of voting machines was permitted in counties, the machines to be installed at county expense, and it was specified that not more than ten per cent of the school funds should be distributed on any other than a census-pupil basis.

Finances. Total tax collections in Kentucky for the fiscal year ending in June, 1941, were \$60,553,000 (1940: \$53,404,000). Total sales taxes amounted to \$24,003,000, including motor fuel, \$15,563,000. Taxes on specific businesses ran to \$8,651,000, general and selective property, \$5,385,000, unemployment compensation, \$11,255,000. The net income taxes were \$5,382,000. Cost payments for the operation of general government totaled \$41,505,000 in 1939, the latest year available. (Revenues for the general government for that year were \$68,086,000.) Cost of operation per capita was \$14.75. Total gross debt outstanding in 1941 was \$16,815,000, as compared with \$16,607,000 in 1932.

Officers and Judiciary. The Governor is Keen Johnson, Dem.) inaugurated in December, 1939, for a four-year term; Lieutenant Governor, Rodes K. Myers; Secretary of State, George G. Hatcher, Attorney General, Hubert Meredith; State Treasurer, Ernst E. Shannon, State Auditor, D. A. Logan, Chief Justice of the Kentucky Supreme Court is William Rees, there are six associate members elected by popular vote for eight-year terms.

KENYA. A British colony and protectorate in East Africa. Area, 224,960 square miles, population (1939 estimate), 3,500,352, including 3,413,371 natives, 46,897 Asiatics, 20,894 Europeans, and 15,481 Arabs. Chief towns: Nairobi, the capital, 61,000 inhabitants; Mombasa, 50,000; Nakuru, Kisumu. Education (1939): 2,125 schools of all kinds.

Production and Trade. Cotton, maize, sugar, coffee, pyrethrum, sisal, tea, timber, sodium carbonate, wattle, and gold (77,243 fine oz., 1940) are the main products. Livestock in European areas (1938): 497,478 cattle, 563,049 sheep, 13,192 swine, and 1,689 goats. Kenya and Uganda are one administrative unit for customs purposes. There is complete freedom of trade between the two territories and Tanganyika, the revenue from customs being allotted to the consuming territory. Trade for 1940 (Kenya and Uganda combined), including bullion and specie: £9,552,000 for imports and £9,252,000 for exports. Shipping (1939): 4,465,549 tons entered and cleared the ports.

Communications. The state-owned Kenya and Uganda railways, during 1940, carried 1,026,337 tons of freight and 1,019,048 passengers. At the end of 1940 there were 16,537 miles of roads. The telephone and telegraph system had 18,985 miles of line.

Government. Finance (1939): £3,811,778 for revenue and £3,808,079 for expenditure. The executive power is vested in a governor, assisted by an executive council. There is a legislative council of 41 members (the governor as president, 11 ex-officio, 12 nominated, and 17 elected). By the Kenya Annexation Order in Council, 1920, the territories of the mainland, excluding the mainland dominions of the Sultan of Zanzibar, were recog-

nized as a colony; the coastal belt rented from the Sultan of Zanzibar remains a protectorate. Governor and Commander-in-Chief, Sir Henry Moore (appointed Oct. 26, 1939).

History. In January, 1941, the East African Governors' Conference, held in Nairobi, was attended by the governors of Kenya, Uganda, Tanganyika, Northern Rhodesia, and Nyasaland, and the acting British Resident in Zanzibar. The Conference agreed in principle to the introduction of the machinery for closer coordination of the policies of Kenya, Uganda, Tanganyika, and Zanzibar in all matters affecting the control of imports, currency, exchange, and supplies for military needs. A report made by the East African Delegation which attended the Eastern Group Conference in New Delhi was considered. The military discussions were attended by the General Officer Commanding in East Africa.

In March it was reported that, as a result of the success of the military campaign in Somaliland, which had removed the threat of an Italian air attack, all the highland districts, including Nairobi, were removing black-out restrictions. The British government, it was announced during April, agreed to buy 100,000 tons of the Kenya, Tanganyika, and Uganda sisal crop due to be marketed between Nov. 1, 1940 and Oct. 31, 1941. Italian civilian deportees from Italian East Africa were being accommodated in a camp at Nyeri, the cost of maintenance being met by Great Britain. See TANGANYIKA under *History*, WORLD WAR.

KIANGSI, KIANGSU. See CHINA under *Area and Population*.

KIDNAPING. See FEDERAL BUREAU OF INVESTIGATION

KINDERGARTENS. See PSYCHOLOGY; SCHOOLS.

KINGMAN REEF. An atoll in the Pacific Ocean 1,067 miles southwest of Honolulu, Hawaii, owned by the United States. The reef is about eight miles long and the lagoon is about five miles wide, but only a small area of land remains uncovered at high tide. The atoll was occupied temporarily by a Pan American Airways crew in 1936-37. Effective May 15, 1941, President Roosevelt proclaimed it a naval defensive area. Unauthorized vessels and aircraft were forbidden to approach within three miles. The Navy Department has jurisdiction over the atoll.

KIRGHIZ SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

KIRIN. See CHINA under *Area and Population*

KODACOLOR. See PHOTOGRAPHY under *Color Photography*.

KOREA (CHOSEN). A former empire of eastern Asia, annexed by Japan on Aug. 22, 1910, and incorporated as an integral part of the Japanese empire in 1919. Capital, Keijo (Seoul).

Area and Population. Area, 85,246 square miles. Population, 24,326,327 at census of Oct. 1, 1940. The racial division of the population on Jan. 1, 1939, was: Koreans, 21,950,716; Japanese, 633,320; foreigners (mostly Chinese), 94,815. Populations of the chief cities on Jan. 1, 1939, were: Keijo (Seoul), 706,396; Heijo (Pyeng-Yang), 185,419; Taikyū, 110,866; Jinsen (Chemulpo), 102,473. The Koreans have their own spoken and written language, but Japanese is the language of the government.

Education and Religion. About 60 per cent of all

adults are illiterate. In May, 1938, there were 3,033 elementary schools with 1,051,070 pupils, 43 middle schools with 23,407 pupils, 51 girls' high schools with 19,072 pupils, 203 vocational and professional schools with 30,406 students, and the University of Keijo with 542 students. As of Jan. 1, 1939, there were 499,300 Christians, 286,000 Buddhists, and about 105,000 adherents of Shintoism, which is supported by the government. Confucianism and ancestor worship are widely practiced. On Oct. 7, 1940, Christian denominations with about 60,000 Korean members were dissolved by the government and merged in a new association pledged to eliminate foreign influence and condemn doctrines at variance with Japanese national policy. The schools maintained by these denominations were reorganized and military drill introduced.

Production. Over three-fourths of the working population is engaged in agriculture and forestry. About one-fourth of the cultivated area is devoted to rice (137,200,000 bu. produced in 1939). Yields of other cereals in 1939 were (in metric tons): Wheat, 334,400; barley, 1,329,700; oats, 39,600 (1938); corn, 98,600 (1938). Millet, cotton, raw silk, soybeans, hemp, tobacco, and fruit are widely grown. Livestock in 1938 included 1,713,000 cattle, 1,620,000 swine, 51,000 horses, and 20,000 sheep. Fisheries production (1938) was valued at 89,920,000 yen. Mineral and metallurgical production in 1936 (the last year for which figures were published) was valued at 110,429,655 yen, chiefly gold (59,353,700 yen), coal (13,310,000 yen), pig iron (7,866,000 yen), steel (6,533,000 yen). Copper, silver, lead, tungsten, graphite, molybdenum, wolfram, and mica also are mined. Mineral and metallurgical output has developed markedly since 1936 under the stimulus of Japan's war emergency and of subsidies advanced by the Korean Government. A number of smelters, iron foundries, and steel plants were under construction in 1941. New power units having over 300,000 kilowatt capacity were placed in operation. Other leading industrial products are textiles, paper, pottery, metal ware, tobacco products, brewed drinks, and leather.

Foreign Trade. Korea's overseas merchandise imports in 1939 totaled 1,388,448,284 yen (1,229,417,000 from Japan proper); exports, 1,006,793,785 yen (736,883,000 to Japan proper). Chief exports (in 1,000 yen): Rice, 174,613; fertilizers, 53,783; crude copper, containing gold and silver, 51,697; raw silk, 24,181; soybeans, 21,104. Chief imports were machinery, silk textiles, timber, coal, fertilizers, rayon, paper, underwear, woolen textiles, millet.

Finance. Budget estimates for the fiscal year ended Mar. 31, 1941, placed both receipts and expenditures at 866,641,112 yen. The public debt on Mar. 31, 1938, was 593,546,214 yen. The yen exchanged at \$0.2596 in 1939 and \$0.2344 in 1940.

Transportation. Railways extended about 3,063 miles on Jan. 1, 1939 (state lines, 2,363; private, 700). During 1940 the state lines laid 106 miles of new track; private lines, 124 miles of standard line and 52 miles of narrow-gauge. Passengers on state lines numbered 82,518,647 in 1940 (59,694,228 in 1939); all rail facilities were reported badly congested in 1941. The 1941-42 state railway budget totaled 422,935,000 yen (25,224,642 yen for new construction). Highways extended 19,048 miles in 1939. Air lines linked Keijo with the other chief cities of Korea, Japan, Manchoukuo, and North China. Shipping entering the open ports in 1938 totaled 14,677,742 tons.

Government. Korea is ruled by a governor-general

appointed by the Emperor of Japan. He is assisted by a Privy Council of 82 Koreans. Governor-General in 1941, Gen. J. Minami (appointed December, 1937).

History. The Tokyo newspaper *Asahi* on March 27 reported that 15 British and American missionaries had been arrested by the Government-General of Korea on charges of engaging in anti-war and anti-Japanese propagandist activities. Following a protest from Washington, some of the American missionaries were released, but they were required to report regularly to Japanese officials. The Washington representative of the anti-Japanese Sino-Korean People's League reported on July 28 that the Japanese had banned the use of the Old Testament in all Christian churches and schools in Korea. On August 25 was announced the completion in Korea after four years of work of the largest dam in the Orient, one of a series of dams called for under the Yalu hydro-electric project.

KOROSEAL. See RUBBER.

KOWEIT. See ARABIA under *Kuwait*.

KUOMINTANG. See CHINA under *History*.

KUWAIT. See under ARABIA.

KWANGCHOWAN (KWANGCHOW). See FRENCH INDO-CHINA.

KWANGSI, KWANGTUNG, KWEICHOW. See CHINA under *Area and Population*.

KWANTUNG. The territory occupying the southern part of the Liaotung Peninsula, Manchuria, leased from China by Japan. Area, including 40 adjacent islands, 1,337 square miles. Population (census of October, 1940), 1,367,334. Chief towns (1938 populations): Dairen, 515,743; Port Arthur (Ryojun), 145,286; Pulantien; Kinchow. Agriculture, fishing, and the manufacture of salt were the main industries. Trade (1937): Y680,061,785 for imports; Y451,798,860 for exports (yen averaged \$0.2879 for 1937; \$0.2344, 1940). Budget (1940-41): Y57,300,655. In December, 1934, the Kwantung Government was replaced by the Kwantung Bureau and subordinated to the Japanese Embassy. See MANCHOUKUO.

LABOR. See CHILDREN'S BUREAU; CONCILIATION SERVICE, U.S.; COMMUNISM; CONSUMERS' COOPERATIVES; INTERNATIONAL LABOR OFFICE; LABOR CONDITIONS; LABOR LEGISLATION, NATIONAL DEFENSE MEDIATION BOARD; NATIONAL LABOR RELATIONS BOARD; RAILWAYS; SHIPPING; SOCIAL SECURITY BOARD; WAGE AND HOUR ADMINISTRATION; WOMEN'S BUREAU. See also the articles on branches of industry; AUSTRALIA, CANADA, GERMANY, GREAT BRITAIN, NEW ZEALAND, and the other principal countries under *History*; articles on States under *Legislation*; UNITED STATES under *Labor*.

LABOR, U.S. Department of. See LABOR CONDITIONS; separate articles on the following branches of the Department: CHILDREN'S BUREAU; CONCILIATION SERVICE, U.S.; WAGE AND HOUR DIVISION; WOMEN'S BUREAU. The Secretary of Labor in 1941 was Frances Perkins.

LABOR CONDITIONS. Sweeping changes appeared on the labor scene as war engulfed most of the world in 1941. As opposing belligerents sought to push production of war materials to its utmost capacity, the rights of labor were restricted in some countries, virtually destroyed in others. In the warring nations employment approached all-time peaks, although the shift from peace to war economy produced serious dislocations of employment, and in

some of the conquered countries industry was disrupted and unemployment greatly increased. Perhaps the most striking development of the year was the expanded control by national governments of almost all phases of labor activities. Strikes were widely prohibited, or the right to strike was voluntarily surrendered in favor of new machinery for mediation and arbitration of industrial disputes. In the United States Federal troops were used to commandeer strike-bound plants for the first time since 1921. In German-occupied Europe, trade union activities were placed under stringent supervision; hire and terminations of employment were subjected to official approval; wages rigidly controlled. Almost universally, regulations restricting the hours of work and the employment of women and young persons were relaxed or abandoned. At the same time, especially in the United States and the British Commonwealth, labor accepted greater responsibility in the councils of government and industry.

Employment and Unemployment. The second world war has affected the level of employment in various countries in diverse ways. In some of the conquered countries of Europe not yet integrated with German economy, unemployment increased during 1941. In Norway, according to trade union fund returns, it rose from 12 per cent in November, 1940, to 18.3 per cent in March, 1941. Between July, 1940, and February, 1941, the number of unemployed registered with employment exchanges in Yugoslavia rose 250 per cent. To the contrary, unemployment in Denmark and The Netherlands was lower than at any time during the past 10 years. Industrial France began to show sign of recovery from the paralysis of conquest as unemployment was reduced to half the 1940 maximum. In Belgium unemployment had spread to 25 per cent of the working population in January, 1941, but by mid-year the number of unemployed had dropped to less than 15 per cent. Sweden and Switzerland, both non-belligerents, presented sharp contrasts. In Sweden unemployment increased four-fold between July, 1940, and March, 1941, due largely to further loss of export markets during the year. Switzerland on the other hand had less unemployment than in 1929. (*Internat. Labor Rev*, Sept, 1941.)

Despite lack of statistics from some countries, it may be stated that in those countries actively engaged in the war unemployment uniformly declined. Germany found it necessary to import workers from Italy and several of the conquered countries. The number of wholly unemployed applicants who registered for work in Great Britain declined from 543,225 in January to 195,747 in October. In Canada during the first half of the year the lowest level of unemployment since 1930 was reached. Australia reported a record low level of 3.6 per cent in the second quarter of 1941.

Unemployment was reduced in the United States to the lowest point in the last 10 years. The Bureau of Labor Statistics of the Department of Labor estimated that there were 3,900,000 unemployed in October, 1941, as compared with 7,400,000 in October, 1940, and 7,600,000 in January, 1941. Total civil nonagricultural employment in October, 1941, amounted to 40,757,000, an increase of approximately 3,382,000 since October, 1940, and more than 3,400,000 above the 1929 peak. The Work Projects Administration (q.v.) estimated that in November 49,400,000 workers, including agricultural labor, were gainfully employed in the United States.

The transformation of industry from peace-time production to a war economy caused serious dis-

locations of employment. The shortage of certain types of workers necessary for war industries increased and at the same time the curtailment of raw materials available to nonessential industries produced substantial unemployment. Estimates of the number of workers in the United States who would lose present jobs because of lack of materials to supply civilian industries have ranged from several hundred thousand to two or three million.

EMPLOYMENT, PAY ROLLS, AND EARNINGS IN UNITED STATES INDUSTRIES DURING 1941*

Month	Employment index	Pay-roll index	Average weekly earnings (dollars)	Average hours worked per week	Average hourly earnings (cents)
Jan	115.5	120.7	27.71	39.0	68.9
Feb	117.8	126.9	28.58	40.0	69.2
Mar	119.9	131.2	29.11	40.4	69.7
Apr	122.6	134.7	29.17	40.0	70.8
May	124.9	144.1	30.78	40.8	72.6
June	127.8	152.1	31.85	41.3	73.8
July	130.7	152.7	31.22	40.3	74.4
Aug	133.0	158.3	31.63	41.0	74.5
Sept	135.2	162.6	32.05	40.9	75.8
Oct	135.3	166.6	32.89	41.1	77.0
Nov	134.7	165.2	32.81	40.3	78.1
Dec.	134.3	170.2	33.69	41.2	78.7

* Condensed from tables of Bureau of Labor Statistics, U.S. Department of Labor. Indexes are based on 3-year average, 1923-25=100, and has been adjusted to preliminary 1939 census figures.

While some immediate increase in unemployment was in prospect, nearly all workers were expected eventually to be reabsorbed by the war industries. To cushion the immediate sharp reduction in production of nondefense articles the Office of Production Management (q.v.) attempted to distribute defense contracts to civilian manufacturing plants, but met with indifferent success. Efforts to reemploy the laid-off workers in defense industries proved more successful.

The shortage of skilled workers was most acute in the machine tool, shipbuilding, aircraft, and ordnance industries. The U.S. Office of Education (q.v.) instituted refresher and supplementary courses in public vocational schools for trained workers whose skill had deteriorated from years of disuse. Intensive engineering courses were provided to train new workers. At the same time the OPM instituted a plan of training-within-industry, the chief features of which were the upgrading of workers who demonstrated proficiency in a skill below the grade required and the breaking down of skilled operations into several parts for which workers could be more quickly trained. The U.S. Department of Labor also established apprenticeship programs in more than 1,000 plants. It is estimated that some 3½ million workers were being trained under these various programs.

Governmental control of placement and transfer of employees was also accelerated by the shortage of industrial man power produced by the war. In Norway, Poland, and Bohemia-Moravia, all under the domination of Germany, stringent laws were adopted making consent of the central government a prerequisite for hiring, termination of employment, and transfer of workers. In Germany government authorization was made a requirement for retirement of workers as well as for other terminations. Compulsory labor was introduced in Bohemia-Moravia and Norway during the year. Russia established standard rules for employment. Workbooks and passports with entry of reasons for prior dismissals were a requisite of hiring. Severe penalties were provided for leaving employment without permission. Great Britain made dismissals and voluntary terminations subject to official consent, and all British subjects were required to

register with employment exchanges. In Australia regulations prohibited employers from engaging employees in specified categories of war-industry employment without the written consent of their former employers and an official permit authorizing acceptance of employment.

The United States adopted no such stringent regulations. The role of the government was to supply information concerning employment opportunities in war industries, to bring to the attention of employers reservoirs of surplus labor which might be absorbed into expanding industries, and to encourage employers and labor unions to arrange voluntarily for the shift of employees from nonessential industries to the war industries. See *EDUCATION under Youth Employment, WORK PROJECTS ADMINISTRATION.*

Hours of Work. There was a continuation of the trend to relax and discard governmental restrictions on the hours of work. In the United States and Canada statutory limitations were abandoned with regard to persons employed in the construction of defense projects and army training centers. In France the regular work week was increased from 40 to 48 hours. In Italy, because of the shortage of skilled labor two 12-hour shifts replaced the three 8-hour shifts in the metal industry, for plants operating less than 24 hours per day the normal work week was fixed at 60 hours. Concurrently, additional compensation for overtime work was greatly restricted. Great Britain set a maximum work week of 60 hours and, after unsuccessful experiments with a 7-day week, prohibited Sunday work with certain exceptions. Contrary to the general trend, a Belgian decree, issued in May, 1941, provided for reduction of working hours to spread employment, and for the payment of special allowances to part-time workers. The South African Factories Act of 1941 reduced the maximum weekly hours of work from 48 to 46.

The average work week in industries of the United States increased from 38 hours in 1940 to approximately 40.5 in 1941, an average slightly above the maximum work week established under the Fair Labor Standards Act without payment of overtime. The average work week for all employed persons in the country, including agricultural labor, rose from 43.3 hours in the previous year to 46.4 in 1941. A census by the Department of Labor, comparing 1940 with 1941, discloses a striking decline in the percentage of employees working less than 40 hours per week and a substantial increase in the percentage of persons working more than 50 hours per week, as follows:

Hours worked during week	April, 1940	April, 1941
Less than 40 hours	27.2 per cent	17.4 per cent
40-49 hours	46.9 per cent	52.4 per cent
50 hours and over	25.9 per cent	30.2 per cent

See **LABOR LEGISLATION; WAGE AND HOUR DIVISION.**

Wages. Statistics as to general wage levels were available from only a very few countries. In Switzerland, Denmark, and Germany the hourly rate of return in real wages declined, cost of living having risen. The British Trades Union Congress reported that wages in Great Britain had increased 20 per cent during the war while the cost of living had risen 30 per cent. In the United States, however, earnings rose faster than cost of living, so that real wages substantially increased. It was estimated that the cost of living rose 12 per cent between September, 1939, and December, 1941, while average weekly earnings in manufacturing industries increased 33.9 per cent. The National Industrial Con-

ference Board reported that from November, 1940, to November, 1941, wages rose 20 per cent; in the same period living costs went up 9 per cent. From mid-November to mid-December weekly earnings were reported to have increased 3.3 per cent and the cost of living only about .3 per cent, indicating the continuing upward trend of real wages to the very end of the year. Average weekly money wages amounted to \$31.85 in June, 1941, as compared to \$25.79 in June, 1940. A large part of this increase was due to substantial overtime work paid for at overtime rates.

In many countries provision was made for a wartime cost-of-living bonus independent of basic wages. The Canadian government provided for uniform bonuses, to be fixed at 3-month intervals, payable for each 5 per cent increase in the cost of living above the August, 1939, level. The Swedish Confederation of Trade Unions and the Swedish Employers' Federation concluded in January, 1941, a new sliding scale wage agreement to meet changes in the cost of living. In Hungary wage supplements of 15 per cent were decreed by the government.

In the German-occupied countries of Europe wage increases were generally prohibited. In Norway the German authorities nullified an agreement for wage increases which had been negotiated between the Confederation of Trade Unions and the Norwegian Employers' Federation. Real wages fell not less than 30 per cent below April, 1940, levels. In The Netherlands wage increases in collective agreements were prohibited unless first submitted and approved by the occupational authorities. The Ministry of Social Affairs of the Government was empowered to change wage rates in collective agreements. A similar decree was put into effect in Bohemia-Moravia. In Belgium no increase in wage rates or salaries beyond the rates and salaries in effect on May 10, 1940, was permitted. In Poland, a wage differential was established in agriculture in favor of German workers on the ground that they were accustomed to a higher standard of living than Polish workers. In industry the same effect was accomplished without a wage differential by requiring Polish workers to pay 15-20 per cent of their wages to the German Government. In France, where wages had been fixed at the pre-war level, supplementary allowances, payable by employers, were provided because of the higher cost of living. See **BUSINESS REVIEW; LIVING COSTS, RAILWAYS.**

Union Movements. Almost without exception the governments of the world increased their control of trade union movements. In the totalitarian countries trade unions were dominated and even absorbed by the government. Throughout the British Commonwealth the war restricted the scope of their activities, and at the same time extended their participation in the government and in war activities. In the United States proposed regulatory measures gained popular support, while the government increasingly brought union leaders into its councils.

Long established trade union movements in many European countries virtually collapsed as German armies swept across Europe. In France the central workers' and employers' organizations were dissolved by decree in November, 1940. The announced policy of the government was to convert the local units of the old organizations into a single trade union which would be prohibited from intervening in political affairs. In Rumania all corporations of workers were completely suppressed because they "did not confine their activities to the

study, protection, and development of their purely occupational limits." German occupation authorities in Norway succeeded in removing the old officers of the Confederation of Trade Unions and gave it a new leadership. As a result, many local units of the Confederation withdrew and withheld dues payments from the central organization. In Bohemia-Moravia, where in 1939 the free trade union organizations had been suppressed and two government-controlled federations of workers had been set up, the latter were replaced by the government-controlled Workers' Trade Union Center.

Trade union membership in the United States and Great Britain showed a marked growth. The American Federation of Labor reported a membership of 4,569,056 and the Congress of Industrial Organizations nearly 5,000,000, large annual gains for both organizations. The independent railroad brotherhoods and other unaffiliated unions also reported increased memberships. The unionization of employees of the Ford Motor Company, Republic Steel Corporation, and Bethlehem Steel Company, previous anti-union strongholds, gave tremendous impetus to the American trade union movement. The British Trades Union Congress reported a membership increase of 200,000.

The annual conventions of both the Congress of Industrial Organizations and the American Federation of Labor endorsed the Government's foreign policy and pledged its cooperation to obtain maximum production. The Congress of Industrial Organizations proposed an industry council for each war industry to be composed of an equal number of representatives from labor and management with an impartial chairman representing the government. The American Federation of Labor emphasized its readiness to cooperate in the war effort and, looking forward to peace, resolved to inform President Roosevelt that "at the conference table . . . labor must have its representation. . . ."

In a far-reaching decision, the U.S. Supreme Court ruled that the anti-trust laws are inapplicable to trade unions engaged in "jurisdictional" strikes resulting in restraints of trade. (*United States v. Hutcheson*, 312 U.S. 219.) In New York, George Browne, president, and Willie Bioff, Hollywood representative, of the International Alliance of Theatrical Stage Employees were convicted of extortion. The American Federation of Labor, at its annual convention in November, refused to reelect Browne to its executive board. See CONSTRUCTION INDUSTRY; MUSIC.

Collective Bargaining. In totalitarian countries normal collective bargaining disappeared, of course, with the outlawing of trade unions. In the countries where freedom of association prevailed, despite the increased government control of union movements, collective bargaining was encouraged and extended to cover increasing numbers of workers and industries. Indeed the purpose of the greater governmental control has been to encourage unionism and to place greater reliance on collective bargaining for the solution of war labor problems. The Swiss Government, in May, was empowered to enforce the terms of existing collective bargaining agreements upon all employers and workers in a given trade or industry even though they are not members of the trade associations which are parties to the agreement. In Great Britain a court of inquiry, appointed under the terms of the Industrial Court Act of 1919, held that during the war emergency an employer must bargain collectively with his employees regarding a dispute which grew out of the discharge of a worker because of her union activity.

The U.S. Supreme Court ruled in *National Labor Relations Board v. H. J. Heinz Co.* (311 U.S. 514) that the National Labor Relations Act required, as part of the procedure of collective bargaining, that employers embrace in written and signed instruments the terms of their agreements with unions representing a majority of the employees in appropriate bargaining units. The National Labor Relations Board (q.v.), which decides disputes as to units and majority designations, determined by means of elections and otherwise more than twice as many such representation disputes in 1941 as in previous years, and certified bargaining representatives in 2,566 cases. For the first time since its establishment in 1935, the Board handled more representation disputes than complaints of unfair labor practices, indicating increased willingness of employers to negotiate agreements with unions certified by the Board. In June, the Ford Motor Company and the United Automobile Workers (C.I.O.) entered into a collective contract, the first with a major automobile manufacturer establishing a closed shop. "Little Steel" (Bethlehem, Republic, Youngstown Sheet & Tube) and the Goodyear Tire & Rubber Company which had long resisted unionization signed agreements with C.I.O. unions during the year. Practically all labor organizations, A.F.L. as well as C.I.O., reported great gains in the number of agreements made with employers. More than half the workers in major defense industries were estimated to be covered by collective bargaining contracts, and the National Industrial Conference Board reported that about one-third of all the union contracts provided for closed shops.

The Office of Production Management, seeking to stabilize shipbuilding labor conditions, initiated bargaining conferences between representatives of the employers and unions in the industry. Four zone agreements resulted, establishing wages, hours, and working conditions for 2-year periods. The U.S. Maritime Commission promoted an agreement between the maritime unions and shipping companies providing war bonuses and other conditions for seamen and establishing an arbitration board for settling disputes. (See SHIPPING.) Other agreements between unions and employers were stimulated by the Federal Government for the purpose of dealing with specific problems such as dilution of skilled labor, transfer of workers from nondefense to defense industries, jurisdictional disputes, etc. The State of Rhode Island adopted a "Little Wagner Act" to encourage collective bargaining modeled on the National Labor Relations Act.

Strikes. With expansion of employment, the number of strikes rose substantially in those countries where the right to strike was still recognized. Little accurate information was available outside the nations of the British Commonwealth and the United States.

The Ministry of Labor *Gazette* reports that in Great Britain, during the first 10 months of 1941, there were 1,038 disputes involving stoppages of work as compared with 762 such disputes during the corresponding period of 1940. The number of workers involved increased from 265,800 to 288,800, and there was a corresponding increase in the number of working days lost by strikes. In Australia, it was estimated that the number of man-days lost during the first 6 months of 1941 exceeded the total for the entire previous year. Canada had 125 strikes during the first 6 months of the year, affecting 37,393 workers, and causing a loss of 151,766 man-days. The number of strikes declined somewhat during the latter half of the year, but

the annual total is estimated to be some 30 per cent greater than in 1940. Canadian strikes tended to run only for short periods before settlement by conciliation, but there were several notable exceptions including a strike for increased wages among 3,700 automobile parts factory workers at St. Catharines, Ontario, lasting nearly 3 weeks.

In the United States there was a sharp upward trend in the number of strikes despite the creation of new governmental agencies to mediate labor disputes in defense industries. During 1941, it is estimated that 4,223 strikes occurred, 75 per cent more than in 1940. It is to be noted, however, that the average duration of strikes in the last three months of 1941 was only one-half as long as the average duration of strikes in the first three months of 1941. The number of workers involved totaled approximately 2,400,000, a half million more than in any year of the past decade. The number of man-days idle was about four times as great as in 1940. In January, 1941, there were 341 strikes in progress and the amount of idleness during the month amounted to 660,535 man-days. By August it had risen to 624 strikes in progress, with 1,750,013 man-days lost. The number of strikes rose even higher in September and October. In December, when the Axis nations declared war on the United States, the wave of strikes declined abruptly. The record for the entire year showed a significant excess over the averages for the 5-year period from 1935-39. Toward the end of the year and early in January, 1942, many national labor organizations pledged themselves to call no strikes in war industries. In several States, the State Federations of Labor (A.F.L.) and the State Industrial Councils (C.I.O.) joined with State Manufacturers' Associations in agreements that there should be no strikes or lock-outs, but disputes would be submitted to arbitration.

According to the Bureau of Labor Statistics approximately half of all strikes involved questions of union organization. Wage-and-hour issues comprised about 36 per cent of the total number of strikes affecting nearly 775,000 workers. Jurisdictional strikes, according to the Bureau, numbered only 45 and involved about four-tenths of 1 per cent of the total number of strikers.

In three outstanding instances during the year, strikes resulted in the seizure of plants by the Federal government. At the Inglewood, Calif., plant of the North American Aviation, Inc., where a dispute arose over wages, local union officials called a strike in the face of pledges by national representatives of the United Automobile Workers Union, C.I.O., not to call a strike while the National Defense Mediation Board took the dispute under advisement. President Roosevelt, acting under his emergency powers, ordered Federal troops to take over and operate the plant. At the Kearney, N.J., yards of the Federal Shipbuilding and Drydock Company, the Navy Department commandeered the strike-bound plant after the company had rejected a recommendation of the National Defense Mediation Board to grant the Industrial Union of Marine and Shipbuilding Workers of America (C.I.O.) a "maintenance of membership" agreement. The third plant seizure occurred at the Bendix, N.J., plant of Air Associates, Incorporated. When the company failed to carry out the terms of a settlement worked out by the National Defense Mediation Board, President Roosevelt ordered the U.S. Army to take over the plant. All three of the plants were subsequently returned to private operation.

Among other strikes headlining the year were

those among coal miners. Approximately 318,000 bituminous coal miners throughout the Appalachian area were idle during the month of April, while a new 2-year agreement was negotiated between the United Mine Workers of America and the various coal operators' associations. The chief controversy concerned elimination of the long-standing 40-cent wage differential between Northern and Southern mines. The National Defense Mediation Board recommended that the differential be eliminated. The parties accepted the recommendations and signed a 2-year contract for the entire Appalachian area. The contract, however, did not cover so-called "captive" coal mines, controlled and operated by large manufacturing industries. When operators of "captive" mines refused a demand for a closed shop, the United Mine Workers called a strike, making idle some 50,000 workers. After the National Defense Mediation Board by a vote of 9-2 recommended that the closed-shop demand be rejected, the union renewed its strike. Through presidential intervention the strike was called off while the union-shop demand was submitted to a three-man arbitration board. By a vote of 2-1 the arbitrators granted the closed shop and the binding award was put into effect.

See CONCILIATION SERVICE, U.S.; NATIONAL DEFENSE MEDIATION BOARD; RAILWAYS under *Labor*; SHIPBUILDING; SHIPPING.

TREND OF STRIKES IN THE UNITED STATES*

Year or month	Number of strikes beginning in year or month	Workers involved in strikes beginning in year or month	Man-days idle during year or month
1933	1,695	1,168,272	16,872,128
1934	1,856	1,466,695	19,591,949
1935	2,014	1,117,213	15,456,337
1936	2,172	788,648	13,901,956
1937	4,740	1,860,621	28,424,857
1938	2,772	688,376	9,148,273
1939	2,613	1,170,962	17,812,219
1940	2,508	576,988	6,700,872
1941:			
Jan	232	91,562	660,535
Feb	253	69,769	1,131,460
Mar.	338	116,320	1,553,200
Apr.	393	510,813	7,099,392
May	448	324,506	2,181,796
June	335	140,220	1,469,248
July	402	138,201	1,301,920
Aug	422	207,456	1,750,013
Sept	475	270,000	1,925,000
Oct	450	272,000	1,960,000
Nov	300	235,000	1,450,000
Dec	175	35,000	500,000

* Condensed from tables of Bureau of Labor Statistics, U.S. Department of Labor. All figures for 1941 are preliminary. The table excludes strikes lasting less than 1 day or involving fewer than 6 workers.

Governments and Labor Disputes. Continuous industrial production without interruption by strikes became increasingly vital to all governments. Accordingly, strikes were either outlawed or, if workers were left free to strike, governments attempted to settle disputes before they reached the strike stage.

Denmark suspended its conciliation act of 1934 and prohibited work stoppages. A Labor and Conciliation Board composed of representatives of employers, labor, and neutral interests was established. The Board acts both as a mediation and a decision-making body. Strikes were also prohibited in Norway and official conciliators were placed under the control of the German Commissioner's Office. In Australia the Commonwealth Conciliation and Arbitration Act was amended in December, 1940, to extend jurisdiction of the Arbitration Court to all industrial disputes regardless of whether or not they extend beyond the limits of any one State of

MAJOR ISSUES INVOLVED IN STRIKES DURING 1941*

[Figures represent per cent of total strikes beginning in month]

	Jan.	Feb	Mar.	Apr.	May	June	July	Aug.	Sept	Oct	Nov **	Dec.**
Wages and Hours . . .	30.0	29.9	26.3	38.3	42.1	44.6	38.0	36.0	38.7	34.8	35.5	39.9
Wage increase	25.3	23.3	22.5	34.4	36.6	41.5	33.7	30.8	33.5	31.1	31.5	31.9
Wage decrease	1.4	2.5	1.8	1.1	2.1	.6	..	2.1	1.7	2.0	2.4	2.2
Wage increase, hour decrease	2.3	2.9	1.6	2.5	3.2	2.5	3.8	3.1	3.3	1.7	1.6	5.8
Wage decrease, hour increase . . . . .	..	.4	.3	.3	.2	..	.5	..	.2	..	..	..
Hour increase . . . . .	.5	..	..	..	..	..	..	..	..	..	..	..
Hour decrease . . . . .	.5	.8	.3	..	..	..	..	..	..	..	..	..
Union Organization . . .	49.3	55.2	56.0	50.5	47.7	44.0	45.5	49.5	44.9	52.1	45.5	38.4
Recognition	10.8	10.0	13.3	10.6	8.3	5.8	8.2	9.7	6.2	8.6	9.2	11.7
Recognition and wages	12.1	24.0	22.5	21.2	22.1	20.0	16.7	17.1	16.4	21.7	15.8	5.8
Recognition and hours . . . . .	..	..	..	..	..	..	3	..	..	..	..	..
Recognition, wages and hours	6.1	7.1	3.5	6.1	6.0	3.4	6.3	3.3	4.5	4.9	5.6	6.5
Discrimination	8.5	4.1	2.8	2.2	3.5	3.7	4.0	5.7	4.5	5.9	5.6	4.3
Strengthening bargaining position	5	2.5	4.1	1.7	2.3	3.1	1.0	2.8	3.1	1.5	8	1.4
Closed or union shop	9.4	5.4	9.2	8.1	4.6	7.1	8.2	9.7	9.0	8.6	8.0	5.1
Other	1.9	2.1	.6	.6	.9	.9	.8	1.2	1.2	.7	.4	3.6
Miscellaneous	20.7	14.9	17.7	11.2	10.2	11.4	16.5	14.5	16.4	13.1	19.1	21.7
Sympathy	5	1.2	.9	.6	.9	.9	1.0	1.4	5	1.2	1.6	1.4
Rival unions or factions	4.2	4.1	5.1	3.9	3.2	3.4	5.3	3.9	4.5	3.2	5.1	2.9
Jurisdiction	4.2	2.1	1.6	1.4	1.6	1.5	1.5	3.3	1.9	2.5	2.4	1.4
Other	11.3	5.8	8.8	5.0	4.3	5.6	8.4	5.7	9.5	6.2	9.2	16.0
Not reported . . . . .	.5	1.7	1.3	.3	.2	..	.3	.2	..	..	.8	..

* From tables of Bureau of Labor Statistics, U S Department of Labor. **Estimated.

the Commonwealth. At the same time Conciliation Commissioners were empowered to investigate any threatened dispute.

In the Western Hemisphere several countries adopted more stringent regulations in an effort to prevent work stoppages. Canada made provision for government supervision of strike votes in war industries. For the period of the war, Chile prohibited strikes and lock-outs of more than 10 days' duration. At the end of 10 days such disputes must be settled by compulsory arbitration. The Federal Labor Act of Mexico was amended to limit strikes to those with lawful objectives; physical violence and property damage were made penal offenses; strikes can only be called by a majority of the employees of the business concerned and only after written demands and a 6 to 10 days' notice of intention to strike have been served upon the employer. The statute requires the employer to make reply to the written demands within 48 hours.

In the United States the Conciliation Service of the Department of Labor doubled its number of commissioners to a total of 120 but was unable to handle all defense strikes. Public sentiment for legislation prohibiting strikes increased. In March, 1941, President Roosevelt, by executive order, created the National Defense Mediation Board. As originally organized the Board consisted of 11 members—4 employers, 4 union leaders (2 A.F.L. and 2 C.I.O.), and 3 public representatives. The announced duty of the Board was primarily that of a mediation agency, but in many instances its recommendations were similar to decisions or awards of an arbitration board. After 7 months the Board all but collapsed when the United Mine Workers, under the leadership of John L. Lewis, refused to accept a decision of the Board denying the union closed-shop contracts in the "captive" mines. The two C.I.O. members of the Board resigned and refused requests of President Roosevelt to return to its membership.

As a result, anti-strike legislation pending in Congress was given tremendous impetus and numerous bills were debated. The Smith Bill for regulation of unions passed the House by a large majority. It provided for registration of unions, filing of financial statements, government supervision of strike votes, restriction on closed shop,

and forfeiture of workers' rights under the National Labor Relations Act in certain circumstances. The bill also contained a provision for placing the National Defense Mediation Board on a statutory basis. The Senate Committee recommended the Ball Bill, which proposed to revamp all the mediation machinery of the government with a Labor Disputes Commission at the top to arbitrate all controversies. This bill also proposed to outlaw strikes for closed shops where closed-shop agreements had not previously been in effect.

The Senate Committee postponed action on the Smith Bill while the Administration convened a war labor conference of industrialists and labor leaders to work out a voluntary program for outlawing strikes in defense industries for the duration of the war. The conference had no difficulty in agreeing that there should be no strikes or lock-outs during the war, and it recommended the appointment by the President of a War Labor Board to arbitrate, or otherwise adjust labor disputes. The conference was not able to agree as to whether union demands for a closed shop should be referable to the Board or whether the status quo as to closed and open shops should be maintained. The President's recommendation to the conference that all disputes, including closed-shop issues, be referable to the Board, was finally accepted. The conference was then adjourned without agreeing on any war labor policies to govern the Board in making decisions and without defining the functions, duties, or form of organization of the machinery needed for adjusting and arbitrating labor disputes.

(Early in January, 1942, the President issued an administrative order establishing a War Labor Board of 12 men, consisting of 4 public representatives, 4 labor representatives (2 A.F.L., 2 C.I.O.), and 4 management representatives. In addition the President appointed a list of umpires and additional management and labor representatives to serve on panels for mediating, arbitrating, or otherwise settling disputes. The order abolished the National Defense Mediation Board, and although it authorized the new War Labor Board to make final decisions, in form and substance the duties and organization of the Defense Mediation Board were maintained under another name.)

Health and Safety. The speeding up of production, the employment of inexperienced workers,

and the extension of hours and overtime work in many countries, increased the probability of industrial accidents and endangered the health of many workers. The annual report of the Bureau of Labor Statistics covering 1940 disclosed that in the United States there were 18,100 fatal accidents, compared with 16,400 in 1939, and 1,782,000 workers suffered temporary total disability, compared with 1,447,700 in 1939. The only reduction occurred with regard to permanent partial impairment: 109,400 persons in 1939; 89,600 in 1940. The report states that "the increases are chargeable to increased employment, longer working hours, and a relaxing of safety precautions in industries which experienced sharp increases in employment." (*Monthly Labor Rev.*, Aug., 1941.) Incomplete data for 1941 indicates that the accident rate will be somewhat higher than in 1940.

British industry reported a marked increase in illness among workers, attributable largely to the longer work week and to lighting and ventilating conditions during "blackouts." Medical supervision was established in many factories and regulations fixing minimum lighting standards were issued. As noted elsewhere, the work week in Great Britain was limited to 56-60 hours after experiments with a longer week. Spain adopted new measures for the prevention of, and compensation for, occupational diseases. Under the plan preemployment medical examinations are required.

Women in Industry. As the war increased in intensity women continued to take over work previously performed almost exclusively by men in many countries. Even in the United States, where large reservoirs of unemployed workers had not yet been absorbed, the number of women workers increased by about 4 per cent. However, this trend was not universal. Because of widespread unemployment, the French Government took steps to restrict the employment of women.

At the end of 1939 women constituted more than one-fourth the total number of workers in Germany. Reports received by the International Labor Office indicate that employment of women has steadily increased since that time. Concurrently, the character of their occupations has changed and they are regularly taking jobs formerly performed by men. They operated public transportation systems and worked in foundries and pattern makers' shops, performing lighter work such as core-making and lacquering. At the same time, new regulations prohibiting women from performing heavy manual labor likely to prejudice health were announced. In the factories of Great Britain, experiments with part-time employment of housewives proved satisfactory. The plan provided for employment of women residing near particular factories on either morning or afternoon shifts, adjusted to the necessities of their household duties.

Protective regulations previously adopted on behalf of women workers were generally relaxed. In Australia the Commonwealth Court of Arbitration ruled that female labor might be employed between 7 a.m. and 10 p.m. In Italy, restrictions on the hours of employment of both women and young persons were suspended and night work was permitted. Trade unions which have been reluctant to permit the employment of women for work normally performed by men relaxed their rules. In Great Britain the National Union of Railwaymen consented to the employment of women in certain railway occupations hitherto prohibited, and the employers agreed that the wages paid to women would be the same as those paid to men performing the same work.

Child Labor. Accompanying the relaxation of regulations protecting women in industry, were similar relaxations with regard to child labor. However, in the United States there was at least one noteworthy advance. In February the U.S. Supreme Court expressly overruled *Hammer v. Dagenhart*, a decision of the same Court, made 22 years earlier, which had held that Congress was without power to exclude the products of child labor from interstate commerce. The new decision was made in the case of *United States v. Darby Lumber Co.*, sustaining the constitutionality of the Fair Labor Standards Act of 1938. See CHILDREN'S BUREAU.

Legislation in certain British dependencies also ran counter to the general trend, as limitations upon the use of child labor were increased both with regard to age and types of work in which children were permitted to engage. It is difficult to determine to what extent previous protective measures surrounding the employment of children have been abandoned in European countries. Restrictions were partially suspended in Italy and compulsory agricultural child labor was introduced in Germany.

See the articles listed under LABOR, especially UNITED STATES under Labor and LABOR LEGISLATION, AUSTRALIA, BELGIUM, CANADA, GREAT BRITAIN, NEW ZEALAND, under History; COMMUNISM; NEGROES.

WILLIAM M. LEISERSON.

LABOR LEGISLATION. Executive orders of the President relaxing certain work hour limitations, and pressure by the War and Navy departments for increased defense production—rather than declaration of war during the final month of the year—affected the maintenance of safety and other labor standards in 1941. Long before the tragedy of Pearl Harbor the State legislatures had adjourned.

Of the 46 State and Territorial legislatures which met in regular session in 1941, only one—New Mexico—failed to add some detail to the accumulating structure of American labor law. However, the annual grist of new laws was interesting owing to the variety of its composition rather than impressive because of volume of important advance.

The Rhode Island legislature was one of the most productive—with a record of passing no fewer than 20 of its 22 labor bills, including the adoption of a "Baby Wagner" labor relations act as well as definite progress away from court and toward commission administration of workmen's compensation. Especially significant elsewhere was Delaware's swing from elective to compulsory compensation; Washington's change from limited list to complete coverage of occupational diseases, Oklahoma's pitiful stumble, after a quarter-century, toward possible compensation in fatal accident cases; and Massachusetts' failure to legislate, which puts creation of State compensation insurance on the ballot for 1942.

Florida furnished the greatest and only important advance of the year in legislation against child labor. Out of 28 wage-hour bills introduced in as many jurisdictions, Puerto Rico and Hawaii alone adopted this legislation; Minnesota by formal statute became the ninth State authorized to cooperate with the Federal Department of Labor in administering the Fair Labor Standards Act of 1938; Alaska created the only new labor department; and Illinois, after prolonged delay, finally adopted rock dusting of coal mines to check the spread of coal dust explosions.

The District of Columbia for the first time is to have safety inspection in places of employment,

through a hookup with the local minimum wage authorities. Other administrative developments of significance include legislation in Colorado and Oregon placing the cost of financing State safety work upon industry, and the obvious concern in a number of States over the administrative problems created by employers who violate the law through failure to insure their risk under workmen's compensation.

No outstanding advance step in social security was taken in 1941, although there were numerous minor revisions of existing State old-age assistance and unemployment compensation laws. The most significant national legislation was the inauguration of Federal safety inspection of coal mines.

Unusual hostility to labor organization was reflected in the introduction of numerous unfriendly bills, but while a number of such measures were adopted few of special importance became law. Reflecting concern over readjustments necessary on account of defense preparations, several State legislatures as well as Congress enacted laws providing for reinstatement to former positions, upon release from active service, of persons selected for training with the armed forces.

More detailed references to this year's principal legislative developments are conveniently grouped under the following topics.

Workmen's Compensation. Changing from the "elective" to the compulsory type of compensation law Delaware also extended coverage to employers of more than 3, liberalized benefits generally, reduced the non-compensated waiting period to 3 days, and added to the occupational disease schedule: dermatitis, silicosis, poison oak, and poison ivy. Florida wiped out the "horticultural" exceptions as well as the exemptions of sawmills employing 10 or less, liberalized benefits, and accelerated claims administration. Illinois raised by 10 per cent the maximum amount of benefit payable in fatal accident and occupational disease cases. Maryland provided a fund from fines collected from no-insurance employers to pay awards against such employers; also transferred State fund to five new per diem Commissioners of the State Accident Fund, and adopted an anti-social waiver system for previously injured employees. Ohio raised the maximum weekly benefit to \$21, and provided for a survey of compensation administration. Washington increased benefits, and changed from schedule to general coverage for occupational diseases. Oklahoma prepared for popular vote on inclusion of death benefits by constitutional amendment. Utah transferred the State fund from the industrial commission to the finance department, and established schedule occupational disease compensation. Montana extended welfare relief to silicotics, and Pennsylvania finally made provision for actual payment of the State's share of compensation to silicotics. Rhode Island made comprehensive improvements in both compensation law and its administration, swinging away from court toward commission enforcement. Massachusetts required no-insurance employers to post notice that their employees are not covered, while North Carolina and Ohio facilitated employee suits against no-insurance employers to prevent removal of property from the State.

Labor Relations. Sixteen States enacted anti-sabotage laws while California for the emergency outlawed the secondary boycott and refusals to handle "hot cargo." Maryland prohibited sit-down strikes. Texas prohibited interference with persons engaged in any lawful employment and Georgia provided for compulsory 30-day cooling-off periods. New Jersey set up a per diem board of mediation in

the labor department and enacted an anti-injunction law. North Carolina authorized a conciliation service in the labor department but made no special appropriation. Rhode Island created a per diem "Little Wagner" labor relations act. On the Federal level a presidential National Defense Mediation Board (q.v.) functioned temporarily until snagged on the closed shop issue in the "captive mine" case.

Child Labor. The outstanding progress against child labor was extension of legislation in Florida to establish the 16-year minimum age for factory work at any time, and for all work during school hours, but with a minimum limit for non-factory work outside of school hours of only 10 years. For minors under 16, the 8-hour day and 40-hour week limited to 6 days is established with prohibition of employment after 8 p.m. and before 6:30 a.m. All agricultural and domestic service outside school hours is exempted, as well as such service for parents at any time at the child's own home. There are also some variations for theatrical and street employments, but employment of boys under 16 and girls under 18 as messengers is prohibited, as well as all under 18 for a specific list of hazardous occupations to be extended by the administration. Employment certificates up to 16 and age certificates between 16 and 18 are required. California relaxed regulations for its theaters and motion picture, radio broadcasting and television studios, permitting appearances of children of 8 (formerly 15), and of any age in radio and television studios on written consent of the labor commissioner. Indiana, by amendment, exempted newspaper carriers from the protection of her child labor law.

Health and Safety. Colorado placed a tax upon all workmen's compensation insurance premiums to finance safety work under the Industrial Commission. Oregon added a 2½ per cent premium tax for safety work in addition to the existing 10 per cent allowed to State compensation fund for expenses of administration. To minimum wage administration in the District of Columbia was added industrial health and safety inspection with rule-making authority for appropriate control under the new "minimum Wage and Industrial Safety Board." Several States, including Colorado, Illinois, Montana, Ohio, Pennsylvania, West Virginia, and Wyoming, strengthened their mine safety laws, and boiler inspection administration was provided in Iowa and Utah. Illinois adopted rock dusting to prevent the spread of coal dust explosions. Outstanding national legislation was provision for Federal coal mine inspection with right of entry and authority to publish findings on health and safety.

Wages and Hours. The "kick-back" on wages set by collective bargaining agreements was prohibited in Illinois, and the public body awarding public work contracts was required to observe the prevailing rate of wages. New Hampshire also extended the prevailing rate system, and prohibited wage "kick-backs." Nevada strengthened her public works provision for the prevailing wage rate. Vermont and Rhode Island extended their pay-day laws to cover additional employers, and the latter authorized the director of labor to collect unpaid wages up to \$200 per claim. Nebraska relaxed statutory hour regulations for females, and provided that fees for extension permits shall constitute a special fund for administrative costs, with rule-making authority given to the commissioner of labor. Relaxing standards in the name of national defense, Connecticut authorized the governor to extend beyond 8 weeks the 10-hour day and 55-

hour week emergency exemption permitted women and minors in manufacturing and mechanical establishments. Puerto Rico enacted a wage-hour law for all workers except domestic servants, and created a board which after industry committees have recommended standards is to hold public hearings and issue mandatory orders on minimum wage and maximum hours as well as on health and safety. On October 4 Hawaii approved a wage-hour plan without provision for wage boards. Minnesota by statute authorized its Industrial Commission to cooperate with the U.S. Department of Labor in enforcing the Fair Labor Standards Act and to be reimbursed for such assistance. Congress suspended several Federal 8-hour laws, provided time and a half is paid for overtime.

Miscellaneous. Industrial home work legislation was importantly strengthened in the one State of New Jersey where a substitute statute will extend wide powers of prohibition to the labor commissioner in addition to the statutory listing of certain prohibited articles. Apprenticeship laws were enacted in Arizona, Montana, New York, and Washington. Arkansas required persons soliciting advertisements for labor organizations to file bond. Kansas and Nebraska imposed penalties on labor organizations discriminating because of race or color. Texas required investigation and favorable recommendation by the commissioner of labor statistics before the Secretary of State may issue or amend a charter granted to organize wage earners.

Administration. Alaska created for the first time a department of labor, headed by a 4-year commissioner. Through State government reorganizations Colorado placed its Industrial Commission without change in an executive department and Indiana transferred its numerous labor law enforcing agencies to a new department of public works and commerce. Connecticut increased by 7 her inspection staff, and the District of Columbia expanded her minimum wage administration to cover health and safety under a new-named Minimum Wage and Industrial Safety Board. Idaho substituted a State fund manager for the existing compensation insurance commission. An investigating commission was created in Indiana to report in 1943 upon needed minimum wage, maximum hour, and labor relations legislation. Minnesota established an interim committee to report on general occupational disease coverage instead of the existing schedule. Nevada transferred employment security to a special new department. Ohio created a Senate committee to survey compensation administration. Wyoming authorized the health board to study occupational disease and report to the governor by Jan. 1, 1943. Congress eliminated mediation functions of the Maritime Labor Board and extended it only to June 30, 1942, with vanishing appropriation. For the first time Federal authority to enter and inspect coal mines and to publish the findings was granted by Congress, the work to be done in cooperation with the Bureau of Mines under the Secretary of the Interior through a large qualified staff selected under the civil service law. Meanwhile, special national defense mediation was provided through executive order, while Congress in an effort to curb strikes prepared for drastic legislation which was indefinitely postponed with the coming of war.

It is important to remember that any annual summary of labor laws enacted by the legislatures does not contain all of the year's new legal regulations for the protection of labor. With the rapid development of "administrative labor legislation" there is year by year a substantial stream of rules

or orders—sometimes in the form of safety codes running to many printed pages—which have the force and effect of law. See articles on States under *Legislation*.

JOHN B. ANDREWS.

LABOR SUPPLY COMMITTEE. See SOCIAL SECURITY BOARD.

LABOR UNIONS. See LABOR CONDITIONS under *Union Movements*.

LABRADOR. See under NEWFOUNDLAND.

LABUAN. See BRITISH MALAYA.

LACROSSE. Johns Hopkins University returned to the top in lacrosse in 1941 after a series of disappointing seasons. The Marylanders went through undefeated, supplanted the University of Maryland as national champions and also gained a leg on the Wilson Wingate Memorial Trophy. The Johns Hopkins team topped its intercollegiate record by whipping the Mount Washington Club of Baltimore, handing the Mount Washington team its first defeat in two campaigns.

For the first time lacrosse was played on mid-Western campuses, and Kenyon College, Oberlin, and the University of Michigan sported teams. In the annual North-South game, the Southerners squeezed out a 7-6 victory when Lazenby of Navy scored just before the final whistle.

LAND FILLS. See GARBAGE AND REFUSE DISPOSAL.

LANDS, Public. See GEOLOGICAL SURVEY.

LAND-USE PLANNING. See AGRICULTURE, U.S. DEPARTMENT OF.

LAOS. See FRENCH INDO-CHINA.

LATAKIA. See SYRIA and LEBANON.

LATEX. See CHEMISTRY, INDUSTRIAL under *Textiles, RUBBER*.

LATIN AMERICA. See articles on the various countries of the Caribbean, Central America, and South America; also AERONAUTICS under *World Air Transport and Airports*; AGRICULTURE under *World Relations of American Agriculture*; ART under *Latin America*; BANKS AND BANKING; BUSINESS REVIEW under *World Business Trends*; COMMUNISM; FASCISM; PAN AMERICANISM; PAN AMERICAN UNION; ROMAN CATHOLIC CHURCH, RUBBER; SPANISH-AMERICAN LITERATURES; UNITED STATES under *Latin America*.

LATIN STUDIES. See PHILOLOGY, CLASSICAL.

LATVIA. A former Baltic state, which proclaimed its independence from Soviet Russia Nov. 18, 1918. It was reannexed to the U.S.S.R. as a constituent republic Aug. 5, 1940, and occupied by German troops in July, 1941. Capital, Riga.

Area and Population. Area, 25,402 square miles; estimated population on Dec. 31, 1939, 1,951,000. About 35 per cent of the population lives in communities of 2,000 or more. Living births in 1939 numbered 36,932 (18.5 per 1,000); deaths, 27,827 (13.9 per 1,000). The population of Riga in 1939 was 393,211; of other towns at the 1935 census: Liepaja (Libau), 57,098; Daugavpils (Dvinsk), 45,160; Jelgava (Mitau), 34,099.

Education and Religion. At the 1930 census, 13.6 per cent of the population 10 years of age and over were illiterate. In 1938-39 there were 1,895 elementary schools, with 229,825 pupils; 114 secondary schools, with 25,225 pupils; 135 technical and vocational schools, with 11,442 students; and one university (at Riga), with 7,281 students. At the 1935 census, 56.13 per cent of the inhabitants

were Protestants, 24.45 Roman Catholics, 14.4 per cent Greek Catholics and members of the Orthodox Church, and 4.79 per cent Jews.

Production. Agriculture, stock raising, lumbering, and manufacturing are the principal occupations. Yields of the chief crops in 1939 were (in metric tons): Wheat, 198,700; barley, 209,000; rye, 429,700; oats, 450,300; potatoes, 1,640,100; beet sugar, 36,000 in 1939-40; linseed, 25,000. Livestock in 1939 included 1,271,720 cattle, 1,469,570 sheep, 891,470 swine, and 414,470 horses. State and private forests covered 4,317,482 acres and produced 3,489,250 cubic meters of timber in 1937-38. There were 5,977 industrial enterprises with 98,497 employees on Dec. 31, 1938. Metallurgy, textiles, wood-working, foodstuffs, and chemicals were the principal manufacturing lines.

Foreign Trade, etc. Merchandise imports in 1939 were 224,600,000 lats; exports, 228,100,000 lats. Prewar trade was mainly with Germany and the United Kingdom. For the fiscal year ended Mar. 31, 1940, revenue was estimated at 198,852,000 lats; expenditure, 198,696,000 lats. As of Mar. 31, 1940, the public debt totaled 197,200,000 lats (internal, 51,900,000; external, 145,300,000). Average exchange value of the lat, \$0.1938 in 1938 and \$0.1852 in 1939.

At the beginning of 1940 there were about 2,075 miles of railway lines, 58,730 miles of roads, 2,775 miles of inland waterways. The Latvian merchant marine in 1939 comprised 194,000 gross tons.

Government. The democratic Constitution adopted by a Constituent Assembly on Feb. 15, 1922, was suspended May 15, 1934, when a *de facto* anti-Communist dictatorship was established by the government headed by Premier Karlis Ulmanis. Parliament was dissolved, political parties abolished, and legislative functions were assumed by the Ulmanis Cabinet. When the term of President Kvisiis expired Apr. 11, 1936, Dr. Ulmanis assumed the Presidency in addition to the Premiership. On Oct. 5, 1939, the Latvian Government yielded to a Soviet ultimatum and signed a mutual assistance pact authorizing the establishment of Soviet military, naval, and air bases in Latvia, but safeguarding the republic's independence. On June 16, 1940, Moscow demanded establishment of a pro-Soviet government. Latvia was invaded June 17, a pro-Soviet regime was set up June 20, and on July 14-15 "managed" elections produced a solidly pro-Communist parliament, which met July 21 and petitioned for Latvia's admission into the Soviet Union. The petition was granted by the Supreme Soviet in Moscow August 5 and ratified by the Latvian parliament August 24-25. Meanwhile sovietization of Latvia was carried out (see YEAR BOOK for 1940, p. 400-401).

History. The German attack upon the Soviet Union of June 22, 1941, was accompanied by an organized rising against the Soviet troops and pro-Communist regime in Latvia by the anti-Communist elements of the population. According to German sources, some 60,000 Latvians took the field (apparently with arms supplied by Germany) and assisted the Reich's forces in expelling Soviet troops. The Germans assisted in preparing this uprising through Latvians who had taken refuge in the Reich at the time of the Soviet occupation in 1940.

The German invasion unleashed a bitter civil war in the rural districts between Latvian patriots and Soviet partisans. This merciless struggle continued even after the German armies had swept over Latvia into Estonia in pursuit of the Red Army (see WORLD WAR). According to a statement issued

by the Latvian Minister in Washington June 25, Soviet rule had been marked by "communistic terrorism," destruction of the social, political, and economic order, and suppression of religious life, all of which produced "indescribable, inhuman sufferings."

Apparently the Latvian exiles in Germany believed the Reich would assist in restoring Latvia's freedom. A Latvian "government in exile" proclaimed the country's independence over the Koenigsberg (Germany) radio on June 23. But when German military control was established, the Latvian nationalists met the same fate as those in the other Baltic republics (see ESTONIA under *History*). After the Latvian exiles in the Reich refused to form a German-controlled regime at Riga, Latvia became a district in Germany's new Ostland Province, with Otto Drechsler, former Mayor of Lubeck, as German Commissioner General.

Looking to Britain and the United States for support, Latvian patriots commenced a struggle to throw off German rule. On June 25 the Latvian Minister in Washington formally repudiated German as well as Soviet control over the republic. He continued to be recognized by the U.S. Government as the legal representative of the Latvian Government.

See GERMANY under *History*.

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Executive. "Constitutional Powers of the President," 27 *A.B.A. Jnl.* 485 (E. Foley, Jr.); "The President, Congress and Foreign Relations," 29 *Cal. L. Rev.* 565 (H. W. Jones); "Veto of the Logan-Walter Bill," 6 *Jno. Marshall L. Quar.* 269 (Cf. Pound, 27 *A.B.A. Jnl.* 133); "Illinois Governor's Veto Power," *ib.* 277 (H. A. Peterson).

Up to Apr. 11, 1941, President Roosevelt had made 75,984 nominations to office, of which 29,068 were of postmasters, most of whom are now under a modified civil service. Congress, by its defense legislation, especially the "Lease-Lend Law," has greatly extended executive power. On February 19, the Missouri Supreme Court in an unanimous opinion, ordered the legislature to seat Forest C. Donnell as governor.

Judicial. "Look at the Law," (1940, pp. 377. P. E. Jackson; a criticism of the American judicial system); "Non-Partisan Selection of Judges," 16 *Ind. L. Jnl.* 57 (L. L. Bomberger); Cf. 24 *Jnl. Am. Jud. Soc.* 194. In *Whitaker v. McLean*, 73 *D.C. App.* 259 (118 *Fed. 2d*) 596 because the trial judge (Goldsborough) had called the plaintiff "a son of a b—," the judgment was reversed.

Supreme Court. On January 20, Justice McReynolds, a member of the court since 1914, resigned,

effective February 21; on June 2 the court adjourned for its summer recess and Chief Justice Hughes, after serving as such since 1930, resigned, effective June 30. To succeed him the President, on June 12, nominated Justice H. F. Stone, thus following the precedent set in the appointment of Chief Justice White, and later in that of C. J. Hughes himself, of selecting as head of the court, one who was or had been a member thereof. For the two vacancies the President named Senator James F. Byrnes of South Carolina (27 A.B.A. Jnl. 475) and Attorney General Robert H. Jackson of New York, both taking office at the opening of the October, 1941-42 term, on the 6th of that month, the day following the death of former Justice Brandeis at the age of 85. "Mr Justice Black and the Supreme Court" 8 U. of Chicago L. Rev. 20, (V. M. Barnett) discusses favorably the justice's record and analyzes his judicial philosophy; work of the court for the 1939-40 term 27 Va. L. Rev. 253, 983 (Moore & Saks); "Business Law (except tax) Decisions," 1940-41 (Commerce Clearing House), "Suits by States," 26 Wash. U. Law Quar. 61 (C. F. Heady, Jr.). The U.S. Government is immune from suit in any court except as Congress has expressly consented thereto. *U.S. v. Sherwood*, 312 U.S. 584, (Cf. "U.S. Court of Claims," 29 Georgetown L. Jnl., 719 (E. E. Naylor)).

Constitutional Decisions. (See 14 So Cal L. Rev. 492, numerals at left indicate, art, sec, & par. of U.S. Const.) For decisions, see also articles on subject.

I, 2, makes no distinction between a primary, and a general, election, where the former is an integral or controlling feature of the procedure of choice, and a conspiracy to deprive an elector of his rights at such primary is punishable under secs. 19, 20 of the Federal Criminal Code. *U.S. v. Classic*, 313 U.S. 299.

I, 8 (3, interstate commerce). In segregating white and colored passengers, equality of service must be maintained, one furnished inferior facilities because of color is entitled to relief by the ICC *Mitchell v. U.S.*, 313 U.S. 80.

I, 8 (3) & Amendment X, authorize the Flood Control Acts of 1938 and 1940, in providing for construction of the Red River Denison Reservoir in Texas and Oklahoma. *Oklahoma, ex rel. Phillips, v. Atkinson Co.*, 313 U.S. 508.

I, 8 (3, 4). Regulation of aliens is an exclusively Federal prerogative and a State statute requiring them to register is invalid. *Hines v. Davidowitz*, 312 U.S. 52.

IV, 1, requiring "full faith and credit . . . to the . . . judicial proceedings of every other state," justifies a federal district court in declaring "satisfied," one of its judgments which had been attached and collected in another State. *Huron Holding Corp. v. Lincoln Mine Operating Co.*, 312 U.S. 183. (Cf. "Circumventing the 4th Amendment," 14 So. Cal. L. Rev. 359 [A. C. Grant].)

I, 8 (3) and Amendment XIV. A State statute penalizing the induction into the state of a non-resident "indigent person" is not a valid exercise of police power and obstructs interstate commerce. *Edwards v. California*, 313 U.S. 545.

I, 8 (4) & Amendment XIV. A discharge under the Bankruptcy Act, though it purports to release the debtor "from all of his provable debts," does not entitle one whose driver's license has been suspended under a State statute, for nonpayment of a judgment for damages caused by his operation of a car, to prevent the enforcement of such suspension. *Rettz v. Mealey*, 313 U.S. 542 (reaffirmed 62 S. Ct. Rep. 24).

Amendment XIV; not infringed by a State statute prohibiting parades or processions, though of religious groups, on public streets without "a special license." *Cox v. New Hampshire*, 312 U.S. 569.

Miscellaneous Decisions. Acts committed more than 100 miles from where the court sits are not "so near thereto as to obstruct the administration of justice," within the statutory definition of contempt (Fed. Jud. Code, sec. 268) *Nye v. U.S.*, 313 U.S. 33, criticizing, if not overruling, *Toledo Newspaper Co. v. U.S.*, 247 U.S. 402.

Under the War Claims Settlement Act of 1938, a certificate (for payment of Mixed Claims Commission awards) by the Secretary of State, is conclusive as against other awarders. *Z. & F. Assets Realization Corp. v. Hull*, 311 U.S. 470.

Lower Federal Courts. "District Courts: Jurisdictional Chaos," 35 Ill. L. Rev. 566.

Where a Federal court's jurisdiction is invoked for diversity of citizenship, it will follow the rule of the State wherein it sits, in awarding interest. *Klaxon v. Stentor etc. Co.*, 313 U.S. 487.

Before the American Law Institute on May 6, Chief Justice Hughes reported on the actual workings of the Administrative Office of United States Courts, which, he said, seeks to standardize and unify the mechanism of Federal judicial administration.

Juries. Right of Trial by, *Corcoran v. Chicago*, 373 Ill 367 (Comment, 19 Chicago-Kent L. Rev. 91); in civil actions, 47 W.Va. L. Quar. 13, "Exclusion of Negroes from," 9 Int. Jurid. Ass'n. Bull. 77; "State's Peremptory Challenges," *State v. Bohanon*, 64 Ohio App. 431 (Comment, 7 Ohio St. U. L. Jnl 80), "Jury Trials Compared," (Federal and Louisiana practice) 3 La. L. Rev. 422 (E. R. Deutsch); "Improper Communications to," *Stone v. U.S.*, 113 Fed. (2d) 70 (Comment, 14 So. Cal. L. Rev. 196); "Impeachment of Verdicts by Jurors," 13 Miss. L. Jnl. 257 (M Williams); 12 Rocky Mt. L. Rev. 222 (reviewing *Wharton v. People*, 104 Colo. 260.); "The Jury's Agreement—Ideal and Real," 20 Oreg. L. Rev. 189 (J. D. Barnett); "Secrecy of Grand Jury Proceedings," *Goodman v. U.S.*, 108 Fed. (2d) 516 (Comment, 16 Notre Dame Lawyer, 66).

Under the N.Y. Act of 1938, authorizing the jury, in convicting of first degree murder, to make a recommendation of clemency which the judge "may" accept, a notorious offender, Stanley Cole, despite such recommendation, was given the death sentence on February 17. Two other cases of 1941 are cited by critics of the jury system as illustrating its weakness, where prejudice or misplaced sympathy may figure. Joseph Spell, a Negro butler, was acquitted of criminally assaulting his employer, Mrs. J. K. Struber, Jr., his defense being that she had invited him. J. Warren Davis, retired judge of the third Federal circuit court of appeals, was tried twice for "selling justice." Each time the jury disagreed and one of the jurors, a Negro, gave as a reason that defendant "was an old man."

Other Causes Célèbres. "The Bertrand Russell Case," is the title of a volume "by nine scholars, edited by John Dewey and H. M. Kallen." The case is also the subject of legal articles in 53 Harv. L. Rev. 1192; 8 U. of Chicago L. Rev. 316; 10 Fordham L. Rev. 196. The deportation proceeding against Harry Bridges resulted in a finding by Presiding Inspector Sears that Bridges was a member of the Communist party and, therefore, subject to deportation. This was rejected by the Board of Immigration Appeals.

Other Courts. The 1941-42 juridical year of *Sacra Romana Rota* (1940 Y.B. 168) was opened at

Rome on October 3 with an address by Pope Pius XII, who disclosed that the court had applied recent psychological theories and declared that ecclesiastical jurisprudence should not neglect the advances of science. Doyen Grazibli had reported the disposition of 82 matrimonial causes in the preceding year, in 30 of which annulment was decreed (17 being handled gratuitously) 16 for lack of consent and 9 for impotence, irregular marriage, etc. The 12 *auditores* (judges) included one American priest. The 800-year-old English Court of Arches, which exercises final appellate jurisdiction over ecclesiastical causes in the province of Canterbury, held its first session, in nearly three years, at that city in 1941. An historic silver oar made in 1715, formerly the symbol of the colonial admiralty court in New York City, was presented to its successor, the U.S. District court on February 14.

Legal Profession. (Literature): In Germany, 27 A.B.A. Jnl. 294 (A. A. Herzberg; regards the profession as ruined); in the Civil Service, 15 St. John's L. Rev. 220 B. Rothman); in Court, *ib.* 5 (E. R. Buckner) "Report of the Conference on Law and Lawyers in the Modern World," 15 U. of Cincinnati L. Rev. 127. In *Gustafson v. V. C. Taylor & Sons, Inc.*, 138 Ohio St. 392, it was held that realtors might draft papers in property transfers without infringing the prohibition against practicing law. Mrs. Agnes M. Mulligan is about to observe her 50th anniversary as the first woman to receive a law degree in New York. On December 3 a Brooklyn grand jury recommended the disbarment, on 11 charges, of Alfred E. Smith, Jr., former City Councilman.

Legal Education. It is reported that enrollment in American law schools for the current academic year is 29.1 per cent less than for the preceding year. Part of this is doubtless due to the draft; but even before that there had been a decrease of 60 per cent in New York alone from 1928 (with 11,511 students) to 1940 with 4,608, which must be largely attributed to higher standards. At the March bar examination in that state, out of 772 applicants, only 317 were certified for admission.

Literature: "The Universities and the Law," 26 Ia. L. Rev. 691 (R. Pound); 7 Ohio St. U. L. Jnl. 3 (Id.); "The Law Student, 1941" 27 A.B.A. Jnl. 187 (L. Green; a brief review of legal education in the United States). "Law Schools and Reviews in England," *ib.* 431 (A. L. Goodhart); "English Lawyers and Law Schools," 7 Ohio St. U. L. Jnl. 164 (G. W. Rightmire); "The Problem of Teaching Private Law," 54 Harv. L. Rev. 775 (K. L. Llewellyn); "The Content of Courses in Legislation," 8 U. of Chicago L. Rev. 280. In the *Bar Examiner* (X, 84), J. E. Brenner, Secretary of the National Conference, proposes "a standard bar examination," patterned on those of the medical and accountants' professions.

Procedure. New rules of procedure, framed under state supreme court supervision, came into force on September 1 in Texas and Maryland. An article urging similar action by the Texas Criminal Appeals Court, appears in 27 A.B.A. Jnl. 91 (G. Simpson); another on the Maryland rules, *ib.* 558 (W. C. Chesnut); a third on "The Rule Making Power" in 2 Federal Rules Decisions, 67 (S. A. Harris) traces the history of authorized rule making by courts and finds it conferred in 21 states, but actively exercised in not more than 11. Other articles are: "Current Procedural Objectives," 27 A.B.A. Jnl. 364 (W. V. Schaeffer); "Streamlining our Court Procedure," 6 Jno. Marshall L. Quar. 178 (O. S. Caplan); "Due Process in," 26 Cornell L. Quar. 317 (class suits; E. R. Moran); in Federal Equity, 41

Columbia L. Rev. 104; "Illinois Civil Procedure," 19 Chicago-Kent L. Rev. 342 (H. N. Gootlieb); "Substance and Procedure in the Conflict of Laws," 39 Mich. L. Rev. 392 (E. H. Ailes). A government corporation is liable for costs in a proceeding instituted by it. *R.F.C. v. J. G. Menihan Corp.*, 312 U.S. 81. The special procedure of the "3 judge court," under Fed. Jud. Code sec. 266, is inapplicable to a proceeding by the United States to enjoin acts of State officials, where the validity of no statute is impugned. *Phillips, Gov., v. U.S.*, 312 U.S. 246. *Habeas corpus* hearings before an United States Commissioner are unauthorized. *Holiday v. Johnston*, 313 U.S. 342; and one is entitled to a lawful hearing who has not been notified of the charge against him. *Smith v. O'Grady*, 312 U.S. 329.

Proof. Professor Morgan discusses the proposed "Code of Evidence," drafted for the American Law Institute, in 27 A.B.A. Jnl. 539, 587, 694, 742 (Cf. 89 U. of Pa L. Rev. 145). "Wigmore on Evidence" (3d ed.) reviewed, 39 Mich. L. Rev. 267 (J. E. Tracy); 35 Ill L. Rev. 540 (C. T. McCormick); 4 U. of Toronto L. Jnl. 151 (D. A. MacRae); 19 Tex. L. Rev. 447 (R. R. Ray); 6 Mo. L. Rev. 41 (R. A. Leflar); "Wigmore's Contributions to," 8 U. of Chicago L. Rev. 78 (G. P. James).

"Judicial Notice of scientific facts," 9 U. of Kan. Cy. L. Rev. 38 (G. L. Whitaker); in aviation cases, 12 Air L. Rev., 41; in libel actions (prior disbarment), *Fletcher v. Evening Star Co.*, 114 Fed. (2d) 582 (comment, 27 Va. L. Rev. 397), "Hearsay. Heresy About," 8 U. of Chicago L. Rev. 621 (J. M. Maguire); "Silence as," 89 U. of Pa L. Rev. 192 (J. F. Falknor); "Scientific Proof," 19 Tex. L. Rev. 414 (H. D. Smith); "Blood Tests" (weight), 15 St. John's L. Rev. 228 (J. T. Timmelly); 16 Tenn. L. Rev. 734 (paternity), fingerprinting is now required of all Federal government personnel as well as of all aliens and of National Broadcasting Company employes; "Hospital Records as Evidence," 4 So. Cal. L. Rev. 99; "Wire Tapping," 1 Lawyers' Guild Rev. 4 (L. F. McCabe); 29 Georgetown L. Jnl. 889 (J. A. McKenna).

See JUVENILE DELINQUENCY; WORLD COURT Compare PRISONS; topics listed under LEGISLATION. C. SUMNER LOBINGIER.

LEAD. Lead is one of the most plentiful of U.S.-produced metals and lead imports in 1940 increased 5.92 per cent: two facts which turned the United States into the custom smelting center of the world. Exports also were lower in 1940, hence the end of that year saw the United States with a reservoir in bonded warehouses of enough tonnage to meet all foreseen requirements of 1941.

Early in 1941 lead consumption began to increase with startling rapidity as defense industries expanded and non-defense industries began to substitute lead and its alloys for scarcer metals. Lead foil to wrap candy, cigarettes, and chewing gum was substituted for tin and aluminum foil; by the end of the year foil-makers had tripled their consumption. Paint and copper pipe manufacturers also turned to lead. It was put under export control, March 1941, to conserve supplies and to prevent its being acquired by unfriendly nations. Lead ore, matte, pigs, bars, and manufactures could not be exported to foreign countries without government license; lead pigments were added to the list in May. By the end of the year there was as grave a shortage in lead as in other non-ferrous metals. In October it was included in OPM's General Preference Order which covered the distribution of both imported and domestic lead and created a pool system for emergencies; and the price was fixed at

5.7¢ a lb. by the OPA. Since the entry of the United States into World War II the military demand for lead has increased so greatly that by the end of 1942 it is foreseen that no lead at all will go to civilian uses.

Total domestic production in 1941 was about 461,749 tons, a 1 per cent increase over 1940. More lead was imported in 1941 from foreign sources than ever since the domestic industry started. Imports of refined lead increased 60 per cent; exports fell 63 per cent. The Metal Reserve Co. imported 336,000 tons of pig lead from Mexico, Canada, Australia, and Peru:— 150,000 tons from Mexico, 40,000 from Peru, 96,000 from Canada. All of this was allocated along with domestic output by the OPM. Tonnage rate per year from Australia was 44,000 tons, but the November and December shipments did not arrive. The spread of the war to the Pacific bespoke more acute delays and even non-arrivals. There was a total available supply of lead in 1941 of 1,086,000 tons including imported and domestic ores and imports of pig recovered from scrap. In 1941 consumption was 1,000,000 tons, 25 per cent more than in 1940. The 1942 needs were estimated at 1,200,000 tons, of which 50,000 tons each month will have to go into Army, Navy, and Marine orders.

The United States has sufficient lead mining and smelting facilities to step up production for 1942 in large percentages. The price was the problem at the end of 1941. Producers claimed that raising the price from 5.7¢ to 7.5¢ a lb would make it possible for them to produce 100,000 tons more each month. Congress began investigations to ascertain whether or not this increase in price was actually needed to keep lead production in step with consumption demands. For production index, see BUSINESS REVIEW under *Minerals*.

LEAGUE OF NATIONS. The League of Nations experienced during 1941 the most difficult year in its history. As the war spread ever more widely over the world, its work was almost completely suspended except for certain limited activities in Geneva, Princeton, and Washington. Meetings had become almost impossible; the nations had chosen the extreme opposite method of settling their differences. Despite this, however, the League remained in being, with forty-eight nations still members, all its agencies subject to call, some of its more detailed work continuing slowly, and, by a war paradox, a considerably quickened discussion of the fundamental principles which had led to its creation.

The year also marked a certain drift on the part of the League back towards the American Continent whence it had drawn its original inspiration. As Europe became more and more overrun, Geneva increasingly cut off, the seat of the Court at the Hague occupied, and communications rendered extremely difficult, parts of the technical work and even of the general direction of the League moved towards the freer atmosphere of the New World.

The only regular meeting held during the year, indeed, was that in Montreal when the Supervisory Commission came together in July for the first time it had ever met outside Europe. The membership of this body, which had been given emergency powers over League affairs for the period of the war, also reflected the changed conditions, for its Continental European members were either unable to attend its sessions or were incommunicado, and new members were added, particularly from amongst representatives in the United States, to give a majority quickly available from North and South America and Britain. The Commission took the necessary steps for the continuation of League work,

fixed the budget for 1942 at 9,647,462 Swiss francs, about a million less than in 1941, and urged on Member States that it is "of the greatest importance for the future to keep up the framework of the League and not to lose the accumulated experience of more than twenty years of international cooperation and administration."

Another meeting in the Americas, which was an outgrowth of League work, was the Second American Conference of National Committees on Intellectual Cooperation in Havana in November. The seat of the central international agency in Paris having been taken over by the Nazis, representatives from all but two of the American Republics met to decide what course of action should be followed. Steps were taken for continuing regional cooperation pending the reestablishment of a universal system, as well as for improving cultural relations.

Meanwhile, the remaining permanent staff, despite the stringent economies of the two previous years, continued its activities in three different centers. The headquarters remained in Geneva, despite all difficulties, with some eighty officials actively on duty in the League's magnificent building which stands today as the sole common possession of practically all the world's nations. Notwithstanding the suspension of the League's normal work, there remained a considerable amount of technical work in connection with the maintenance of the central organization of the League and the fulfillment of various treaty and other obligations. Certain officials were following general developments, particularly as regards postwar problems, and others continued technical responsibilities in economics, finance, health, epidemics, mandates, and the like.

The two groups transferred to the United States in 1940 had fully resumed their work during 1941. The Economic, Financial, and Transit Department at Princeton concentrated on attempting to trace the major changes that were taking place in the economic structure of the world and on considering in advance some of the innumerable problems which will arise at the peace, while at the same time continuing its long-term studies on economic crises, population pressure, taxation, and other matters. Similarly, the anti-drug group became well established in Washington (see *NARCOTIC DRUGS CONTROL*).

Though most of the League's regular work had been suspended in a world at war, the discussion of the fundamental principles of international cooperation and organization upon which it had been based became greatly quickened as the war extended and people the world over began to ask whether it was leading. The most official expression of this preoccupation appeared in the Atlantic Charter which forecast "the establishment of a wider and permanent system of general security." Subsequently, also, the promulgation of the United Nations was interpreted in many quarters as another step in the same general direction. By the middle of the year a Gallup Poll brought out that "unnoticed and unheralded by even the shrewdest political observers over the past months, public opinion has undergone a marked reversal on the question of American membership in a League of Nations." Shortly after, Under-Secretary of State Sumner Welles expressed a widely developing view when he said, "I cannot believe that peoples of goodwill will not once more strive to realize the great ideal of an association of nations through which the freedom, the happiness, and the security of all peoples may be achieved."

See *FINLAND* under *History*. Compare *INTERNATIONAL LABOR ORGANIZATION*; *WORLD COURT*.

ARTHUR SWEETSER.

LEASE-LEND. See under LEND-LEASE.

LEATHER. International trade in leather and skins was still further curtailed in 1941. Owing to a scarcity of shipping space, countries that raise large quantities of leathers and skins had difficulty in getting their products to manufacturing countries, causing surpluses in some places and scarcities in others. This caused many producing nations to go into the processing and manufacture of leather products and many manufacturing nations to develop the raising of hides and leathers. In Europe, raw material shortages, government regulation, scarcity of skilled labor, high production costs, and loss of foreign markets has made it impossible to maintain normal production of leather. Military requirements have been met at cost of civilian shortages.

In the United States, sale of wet salted and dry hides was constant and the flow from abroad augmented our greatly increased domestic slaughter giving us a record year's workings. Approximately 28 million cattle hides were sold, an increase of one-third over the previous five-year average, about 14 million calfskins and kips; sheep and lamb, 52 million skins, against the previous five year average of 32 million skins, and 50 million goats against a previous average of 40 million. A record U.S. Production of 500 million pairs of shoes (see SHOE INDUSTRY) has been responsible for the increased domestic production and importation of leather. The United States military forces have bought 16 million pairs of shoes using top grades of leather, but with little disruption of supply to civilians.

There were two significant events in the industry during the year. In June the Office of Production Management placed a ceiling on hides, kips, and calfskins in order to control the price of leather and shoes. It was successful and prevented any important increase in prices. In December OPM asked leather dealers to discontinue dealing in foreign hides and skins and assumed control of all imports. This is interpreted in official circles as a move to prevent speculative buying from forcing foreign hide and skin prices too high above domestic ceilings.

Light cow hides, the industry's barometer of prices, opened the year at 13 cents, rose to 17½ cents in May, then the government established a ceiling of 16 cents in June and the price closed at 15½ cents for the year. See SHOE INDUSTRY.

JOHN F. W. ANDERSON.

LEBANON, Republic of. See SYRIA AND LEBANON.

LEeward ISLANDS, British. A British West Indian colony, consisting of a federation of the four presidencies shown in the accompanying table.

Presidency (Capital)	Sq. mi.	Pop. (1939)
Antigua (St. John)	171	35,527
Barbuda and Redonda	69	1,000
Montserrat (Plymouth)	32½	13,670
St. Kitts* and Nevis (Basseterre)	152	37,569
Nevis	50	13,900
Anguilla	34	6,717
Virgin Islands ^b (Road Town)	67	6,364
Leeward Islands^c (St. John)	422½	93,130

* Also known as St. Christopher. ^b Including Sombroero
^c The presidency of Dominica was transferred from the Leeward Islands to the Windward Islands on Jan. 1, 1940.

Chief towns (approximate 1938 populations): St. John, 10,000; Basseterre, 8,000; Plymouth, 2,000; Charlestown, 1,200; Road Town, 400. Education (1938): 112 schools and 17,659 pupils.

Production and Trade. Sugar, limes, oranges, lemons, grapefruit, cotton, bananas, coconuts, salt, and tobacco are the principal products. Trade (1939): £591,034 for imports and £713,734 for exports. Sugar, cotton, and limes were the main exports. Shipping (1939): 6,409,408 tons entered and cleared the ports. At the end of 1940 there were 750 miles of roads.

Government. Finance (1939): £396,197 for revenue and £411,789 for expenditure; public debt, £330,276. The administration for the whole colony is headed by a governor, assisted by a federal executive council and a general legislative council. For local government each of the presidencies of Antigua, Montserrat, and St. Kitts-Nevis have their own executive and legislative councils while the Virgin Islands has an executive council. Governor and Commander-in-Chief, Sir Douglas Jardine (appointed July 4, 1941). For an account of proposals for agricultural development and welfare in the Leeward Islands, consult the *Crown Colonist* (London, June, 1941; p. 261). See ANTIGUA; BRITISH WEST INDIES.

LEGISLATION. See UNITED STATES, the articles on the States and foreign countries; LABOR LEGISLATION, TAXATION, ETC.

LEND-LEASE ADMINISTRATION. The Lend-Lease Act was designed and enacted by the Congress in order to enable the President effectively to carry out the desire of the American people to furnish material aid to all nations resisting Axis aggression. With the United States now actively engaged in the war on the side of those same nations the lend-lease program continues to be a means by which the vast material resources of the United States may be pooled with those of our Allies throughout the World.

From the beginning the lend-lease program has been the joint responsibility of a central administrative unit and of the various procuring agencies of Government. The present organization, known as the Office of Lend-Lease Administration, was established by the Executive Order of Oct. 28, 1941. Under that Order the Administrator was given authority, within the limits of such general policies as the President might from time to time prescribe, to exercise all of the powers of the President under the Lend-Lease Act "with respect to any country whose defense the President shall have found to be vital to the defense of the United States"

In order to insure that the Lend-Lease program will continue to be in accord with American foreign policy and economic defense the Executive Order of October 28 also provided that the master agreements which are from time to time entered into with the various countries receiving lend-lease aid shall be negotiated by the State Department with the advice of the Board of Economic Warfare and the Lend-Lease Administration, and that all matters affecting the economic defense of the United States are to be cleared with the Board of Economic Warfare.

The broad delegation made to the Lend-Lease Administrator under the October 28 Executive Order has materially speeded up the operation of the lend-lease program.

Legal Requirements. The Lend-Lease Act set forth several conditions precedent to furnishing aid to any country. Probably the most important of these is that such aid shall be made available only to those countries whose defense the President finds to be vital to the defense of the United States. Such findings have so far been made by the President

with respect to the following countries: Argentina, Bolivia, Brazil, British Empire, Chile, China, Colombia, Costa Rica, Cuba, Czechoslovakia, Dominican Republic, Ecuador, Egypt, El Salvador, Free Belgium, Free France, Greece, Guatemala, Haiti, Honduras, Iceland, Mexico, The Netherlands, Nicaragua, Norway, Panama, Paraguay, Peru, Poland, Russia, Turkey, Uruguay, Venezuela, Yugoslavia.

Other legal prerequisites to the extending of lend-lease aid are the requirement, contained in Section 3(a) (2) that the Chief of Staff or the Chief of Naval Operations be consulted with respect to transfers of materials procured out of appropriations made before the passage of the Lend-Lease Act, and the stipulations, contained in Sections 4 and 7, that assurances be obtained from lend-lease aid recipients that materials received under the Act will not be allowed out of their immediate control and that American patent rights in articles or information transferred will be protected. Section 5(b) requires that a report to the Congress be made every ninety days.

Funds. Appropriations made specifically for lend-lease purposes totaled about 13 billion dollars on Jan. 15, 1942, with additional authority, as set forth in Section 3(a) (2) of the Lend-Lease Act, as amended by the Third Supplemental National Defense Appropriation Act, 1942, for transfers of up to \$2,800,000,000 of material procured out of non-lend-lease appropriations. Two billion dollars of this sum is made available for transfers from War Department stocks, and the remaining 800 million is available for all other lend-lease procuring agencies, such as the Navy, Treasury, and Agriculture Departments and the Maritime Commission. The latter, however, may lease to lend-lease nations any ships built with the \$698,650,000 appropriated for the construction of vessels in the First Supplemental National Defense Appropriation Act, 1942.

Lend-Lease Methods. The Lend-Lease Administration is not a purchasing agency. Its task is to coordinate and expedite the Lend-Lease program. The task of supplying the items transferred falls upon the War, Navy, Treasury, and Agriculture Departments, the Maritime Commission and any other agencies which might be appropriate. The requests of foreign governments for aid are submitted to the Lend-Lease Administration and the various governmental procuring agencies by the representatives of the Lend-Lease countries. If such requests are approved, funds are then allotted to the procuring agencies by the Lend-Lease Administration to cover the expense of procuring, packing, storing, and transporting the materials authorized to be transferred to the places where they are most needed. Such allotments of funds are, of course, not necessary where the item in question may be transferred from stock already on hand.

Requisitions for defense aid are submitted, wherever possible, in the form of comprehensive programs, rather than singly, so that the lend-lease needs of our allies may be more accurately surveyed and fitted into America's total war program. Provision is made, of course, for individual items, the need for which cannot be foretold in advance, to be separately submitted and reviewed. All requests for aid, however, whether submitted upon a program or individual basis, are carefully appraised, and approved only if they conform to the following standards:

1. The defense aid requested must be for a specific use essential to the war or defense effort of a country whose defense the President has found vital to the defense of the United States.

2. Funds must be available for the defense aid requested and must be expended for the items most urgently needed in the war effort.

3. The defense aid requested must be scheduled for use where it can best contribute to the total war effort.

4. The defense aid requested must be obtainable at as low a cost, in terms of Lend-Lease funds and of component critical materials, as is consistent with the needs which it is designated to meet.

5. The defense aid requested must not be obtainable, as a practical matter, by payment therefor in American dollars or other currency available to the requisitioning country.

Lend-Lease Agreements. In addition to the commitments required by Sections 4 and 7 of the Act, formal agreements have been concluded by the State Department with a number of countries, and negotiations with others are in process. These agreements are designed to record the understanding between the United States and the nations receiving lend-lease aid with respect to such matters as the terms and conditions of repayments under the Act, the protection of American interests, including patent rights, in the articles or information transferred, matters pertaining to the common defense of the signatories, and the supply and distribution abroad of materials transferred.

Examples of Lend-Lease Aid. Over 11 billion dollars had been allocated on Jan. 15, 1942, for the procuring of war supplies, and aid actually rendered equaled over a billion and a half dollars of this amount on that date. The arms, ammunition, planes, tanks, ships, motor vehicles, raw materials, tools, food, medicine, and defense articles of all sorts which this money is paying for is flowing in great quantities to the British, the Russians, the Chinese, the Dutch, the Australians, the Latin Americans, and the other allies of America all over the world.

In addition, lend-lease funds are maintaining military missions in the Middle East, in Russia, and in China. The Air Corps Ferrying Command has been established, and delivers aircraft to lend-lease nations around the world. British and Dutch and other allied ships are being repaired in American ports. Thousands of R.A.F. pilots are being trained in U.S. Army and Navy flying schools. Technicians have been sent to Britain, to China, to Africa, and to the Middle East, to assist in the assembling, repairing, and maintaining of military equipment supplied under the lend-lease program. Ships carrying lend-lease cargoes are sailing all the seas. The productive capacity of factories built with lend-lease funds is swelling the total output of the United States. These are but examples of the way in which, through the Lend-Lease Act, the resources of America have been dedicated to the cause of victory and freedom.

See BUSINESS REVIEW; UNITED STATES under *Foreign Affairs, Latin America, Defense*. See also the industries and products affected, as AGRICULTURE, DAIRYING, LIVESTOCK, SHIPBUILDING; the countries which received lend-lease aid, notably BOLIVIA, BRAZIL, CANADA, CHILE, CHINA, COSTA RICA, GREAT BRITAIN, GREECE, MEXICO, NETHERLANDS INDIES, NEW ZEALAND, TURKEY, URUGUAY, YUGOSLAVIA, under *History*.

E. R. STETTINIUS, JR.

LIAONING. See CHINA under *Area and Population*.

LIBERIA. A Negro republic, founded in 1847 by freed slaves from the United States, on the west coast of Africa between Sierra Leone and French Ivory Coast. Capital, Monrovia (pop. about 10,000).

Area and Population. With 350 miles of coastline and a total area of about 43,000 square miles, Liberia has a population estimated at between 1,500,000 and 2,000,000. Only about 60,000, residing mainly along the coast, may be considered civilized.

Among them are some 12,000 American-Liberians, who form the governing and intellectual class. The primitive natives of the interior belong to six main and numerous smaller tribes, each with its own language. English is the language of government and commerce. There were 261 United States citizens in Liberia on Jan. 1, 1941.

Education and Religion. About 10,000 pupils were attending 70 government and 80 mission schools in 1938. There are two colleges at Monrovia (one government and one Methodist) and an industrial and vocational school at Kakata. The American-Liberians are Protestant Christians; the indigenous tribes, mainly pagans and Moslems, with some Christian converts.

Defense. There is an enlisted Frontier Force of 750 men and a militia of some 4,000 men, organized in 7 infantry regiments.

Production. Rubber, produced on the Firestone Company's 1,000,000-acre concession at Marshall, on the coast 40 miles south of Monrovia, is the chief export crop. The 77,000 acres under cultivation in 1941 produced more than 14,000,000 lb. of dry rubber annually. Native coffee, cacao, sugar cane, cotton, passava fiber, palm oil and kernels, kola nuts, rice, oil seeds, and gold are produced in relatively small quantities. There are rich undeveloped forest, mineral, and agricultural resources.

Foreign Trade. Merchandise imports in 1940 were \$2,235,961 (\$2,002,864 in 1939); exports, \$3,242,290 (\$2,714,133 in 1939). The United States supplied \$1,509,608 worth of imports and took exports worth \$2,895,312 in 1940. Rubber exports were 14,015,614 lb. valued at \$2,645,573. Machinery and apparatus, motor trucks, automobile accessories, chemicals, and iron and steel containers were the leading imports.

Finance. The 1941 budget estimates balanced at \$674,800. The largest appropriations were: Debt service, \$149,800; War Department, \$91,237. Actual collections in 1940 were \$898,617 (estimated receipts, \$675,000). External bonded debt, \$1,486,000 on Dec. 31, 1939; internal floating debt, \$200,100. The unit of currency is the Liberian dollar, which was pegged to sterling at 4 shillings 2 pence. Under the terms of a loan contract, the government has an American financial adviser.

Transportation. Transportation in the interior is carried on mostly by porters. There are no railways, only about 300 miles of road suitable for motor traffic, and little animal transport. The St. Paul River is navigable for 25 miles. In 1941 Monrovia became an alternate stopping point in the ferry service for military planes established between the United States and Egypt, and a regular station on the new Pan American Airways route between New York and Leopoldville, Belgian Congo. Marshall and Monrovia are the principal harbors. All cargoes must be loaded or unloaded by surfboats or lighters.

Government. While the Constitution is modeled on that of the United States, suffrage is restricted to Negro landowners. The True Whig party, dominated by a small oligarchy of American-Liberian families at Monrovia, has controlled all branches of the government since 1878. President in 1941, Edwin Barclay, inaugurated Jan. 6, 1936, for an eight-year term.

History. President Roosevelt's announcement, in August, 1941, of a new air line to be operated by Pan American Airways between New York and Leopoldville, Belgian Congo, created a role for Monrovia as the natural landfall and first African station for eastbound airplanes on the new route (see AERONAUTICS). For the first time in a long and close relation with the United States Liberia

assumed a specific usefulness for carrying out American external policy. The treaty of conciliation that the United States and Liberia had signed in 1939 came into force in 1941 by the exchange of ratifications in March and was proclaimed at Washington April 4. It provided a permanent international committee for the investigation of any cause of dispute between the two governments. A legation building, the first owned there by the U.S. Government, was opened at Monrovia, March 31. The Firestone interests, American makers of tires, found their developing plantation in Liberia much enhanced in importance at the end of 1941, as Japanese invasion in the East Indies threatened much of the Occident's main source of crude rubber. The Firestones' Liberian enterprise promoted the cultivation of rice to feed its native workers.

LIBRARY PROGRESS. The end of the year 1941 found libraries adjusting their services to emergency conditions produced by the declaration of war. The mobilization of the civilian population of the country for defense activities at home, and for better understanding of democracy's meaning and place in a world at war, afforded libraries a new opportunity to serve, through the use of books, in a national crisis. Physical fitness, social welfare, participation in civilian defense, training for defense industries were recognized as objectives which could be achieved more swiftly through wide use of printed materials, and libraries immediately turned their energies to supplying literature on these subjects in great volume.

War-information centers in libraries were in process of establishment all over the country as the year closed, notably in cities such as New York, Denver, Portland, Ore., and Gary, Ind. Technical services to industry continued. Almost every library reported increased demand for books on industrial topics, skills essential in manufacturing necessary materials, and reports which save duplication of effort in cases where independent research workers are aiming at similar results. Portland, Ore., reported highly confidential investigations on behalf of the U.S. Army, in addition to services to the local shipbuilding industries, and to municipal officials responsible for safeguarding necessary public utilities. Many attempts were made to obtain government funds to make these special emergency services immediately available. It was impossible in most communities to satisfy the demands fully because book supply was inadequate.

Bills introduced into Congress which contained enabling legislation for Federal aid to libraries were the Harrison-Thomas Bill, the Lanham Bill, its successor, H.R.4545 and H.R.4926. Efforts to have libraries specifically included in the Lanham Bill and in H.R.4545 (for community facilities in defense areas) were ably supported by Charles P. Taft, Assistant Coordinator of Health and Welfare, but proved unsuccessful. Libraries in camps and army hospitals have been established under the Morale Division of the U.S. Army, however, and a book fund of \$400,000 was appropriated for this purpose. Technical libraries for the Army Air Corps are under separate organization. Libraries at naval stations and on ships have been in operation by the Navy Department for several years, but have undergone marked expansion. A national book drive to supplement the resources of the Army and Navy was organized late in 1941 by the American Library Association, the United Service Organizations, and the American Red Cross, under the direction of Miss Althea Warren, librarian of the Los Angeles Public Library.

State Aid. In State aid, more legislative progress was made than in any previous year. Arkansas, Louisiana, Pennsylvania, and Vermont increased their State appropriations for public library service. Michigan voted \$500,000 for a two year period, after State aid had lapsed for the previous biennium. For the first time, Michigan appointed a professionally qualified State librarian. North Carolina earmarked \$200,000 for the development of libraries in that State, and Ohio, Nova Scotia, and British Columbia continued public support on a State-wide basis.

Regional library service shows definite progress. Massachusetts, Vermont, and New Hampshire have bookmobile services that cover large areas. Libraries to serve the Cherokee Dam area in Tennessee (Jefferson, Grainger, Hamblen, and Hawkins Counties) constitute the fifth regional library demonstration organized by the Tennessee Valley Authority and operated under contract with an established local library agency. WPA demonstrations are responsible for regional service in Georgia. Official WPA figures in April, 1941, show forty-one State-wide library projects now in operation. Louisiana, Virginia, California, British Columbia, Prince Edward Island, and the British West Indies provide library service on the regional plan in all or part of their territory. (For fuller information see *A.L.A. Bulletin*, Oct. 15, 1941.)

Statistics of Service. The most recent statistics for library coverage in the United States were compiled in 1939 and are based on the 1930 census. These figures show 47,000,000 people in the United States and Canada were without easy access to public libraries. New figures, based on the 1940 census, will be available early in 1942. The February number of the *A.L.A. Bulletin*, 1941, carried a tabulation of college and school library statistics for 1940, and a similar tabulation for public libraries appeared in the April number. Statistics of library income per capita show that, among 89 libraries serving populations of more than 100,000, only eight meet the minimum income desirable for good service, as prescribed by the American Library Association. These are Bridgeport, Conn., Cleveland, Ohio, Fort Wayne, Ind., Newark, N.J., Pittsburgh (Old City), Penn., Providence, R.I., Rochester, N.Y., and Toledo, Ohio.

Adult Education. Education for economic security and a tenable world peace based on democratic principles has become a major influence in shaping library service to adults. The American library as a whole has been fitting itself into the overall educational picture, by cooperating with other agencies in focussing all educational forces on the same objective. New library methods have been evolved, such as the film forum, which combines documentary films, supplementary reading, and public forum discussion in programs sponsored by libraries and open to all members of a community. These have been successfully tried in cities such as Knoxville, Tennessee, Cleveland, Minneapolis, and New York, under the joint sponsorship of the American Film Center, the American Library Association, the American Association for Adult Education, and the American Association for Applied Psychology.

Special Services and Activities. Surveys of library needs related to defense were based on data gathered by the American Library Association from representative libraries all over the country, and were summarized in four reports: (1) Use of Library Materials in Vocational or Trade Training at Lower Levels, by R. Russell Munn; (2) Public Library Service and Needs, by R. Russell Munn;

(3) Study of Defense Activities of College and University Libraries, by a committee of the Association of College and Reference Libraries, Charles M. Mohrhardt, chairman; (4) Study of Book Needs, by Walter H. Kaiser.

The second annual report on notable acquisitions to American libraries, covering the period July 1, 1939 to June 30, 1940 was completed and was published in the *Library Quarterly*, July, 1941. The Union Catalog of the Library of Congress is making successful progress in centralizing information concerning the availability of American research materials.

Gifts, Grants, and Buildings. During 1941, the American Library Association continued to administer funds provided by the Carnegie Corporation (q.v.) for defense activities and for aid to libraries in war areas. Development of Latin American relations in the library field progresses with the financial aid of the Rockefeller Foundation (q.v.). A Carnegie Corporation grant of \$100,000, during 1941, was devoted to the development of libraries in colleges for Negroes, through the purchase of books.

Gifts of unusually valuable private collections were made during the year. The Boston Public Library received the Mathematics and Mathematical Physics Library, numbering several hundred volumes, given to the Library by Paul S. Bauer in memory of his father. The collection of Americana accumulated by Judge E. E. Robinson of San Francisco was given to Stanford University Library. The collection includes a large group of Colonial and Revolutionary newspapers. The Donald R. Dickey Library of Vertebrate Zoology, numbering 10,000 volumes, was presented to the University of California by the explorer's widow. The New York Public Library received the Beethoven Association's collection of music, pictures, manuscripts, musical instruments, and contract rights, as well as the residue of its funds. One of the finest and most valuable Conrad collections in existence went to Dartmouth College Library as the gift of George Matthew Adams. A collection of the works of Sarah Orne Jewett and the bulk of the estate of Jane Burbank were left to the Public Library of Portland, Me.

Gifts for library buildings include a children's library for Palo Alto, Calif., provided by Mrs. Lucie Stern. A \$2,000,000 trust fund was established for the Linda Hall Library at the University of Kansas City. Henry Edwin Sever left \$110,000 to the public library of Kahoka, Mo., of which \$100,000 must be spent on a library building; \$57,000 for a memorial library building in Liberty, Mo., was provided in the will of Frank Hughes.

The Ingersoll Memorial Building of the Brooklyn Public Library, begun in 1912, and rebuilt in 1938-39 at a cost of about \$5,000,000 was finished in 1941. Other new buildings completed during the year were Harvard University's Howard-Tilton Memorial Library at Tulane University, the Georgia State Women's College Library, the Hood College Library, the Joint University Libraries at Nashville, Tenn., and public libraries of White Plains, N.Y., Jacksonville, Fla., Passaic, N.J., and Glencoe, Ill.

Library Training and Personnel. Numerous institutes offering in-service training to librarians were conducted by library schools, State library extension agencies, and groups of members of the American Library Association. New courses were offered at the library schools of Louisiana State University, Drexel Institute of Technology, New Jersey College for Women, George Peabody College for Teachers, and Pratt Institute. Beginning in 1941, the first

year curriculum at Simmons College and the University of Michigan may be completed in summer sessions. The University of Illinois and the University of Michigan are helping to coordinate the library training programs given by all institutions in their States. About 1,500 students were graduated from accredited library schools during 1941, and of these approximately 100 received degrees for more than one year of graduate study.

A library school for Negroes was organized at Atlanta University, with the aid of a grant from the Carnegie Corporation. The first survey of a library school is in progress at the University of Illinois. Indiana was the only State to pass a general certification law which prescribes standard qualifications for librarians. Certification for school librarians became effective in the State of Michigan in July, 1941.

International Activities. Under terms of a grant from the Rockefeller Foundation, books continued to go to popular libraries in Europe, in spite of increasing transportation difficulties. The grant is administered by the American Library Association. For the first time, the Association was permitted under the grant to use funds for books for Greenland and Canada. Reading material from the United States was sent to internment camps in Canada. Books and magazines for research are being purchased and stored in the United States for delivery to scholarly European libraries after the war. Reciprocal arrangements are being considered, because of the difficulty of importing foreign research periodicals and books for American libraries. An American Library Association committee is negotiating for permission to buy important research literature in countries with which the United States is now at war, and is investigating the possibility of insuring the shipment of material detained at ports because of British and American regulations. The American Library in Paris is still operating under the supervision of the board of trustees, but the professional staff has been forced to return to the United States. A similar library, the Benjamin Franklin Library in Mexico City was established by the American Library Association in 1941, and is due to open in February, 1942. It will be a typical American public library, designed to serve a community of medium size, but there will be special emphasis on services of international importance, such as English and Spanish classes, recordings of readings of poetry and prose expressive of the American spirit. The library will act as an exchange center for research material from Mexico and the United States.

For statistics on college libraries, see table under UNIVERSITIES AND COLLEGES. See also *Library* under SOCIETIES.

Publications. Two Spanish texts in the library field were issued by the American Library Association during the year *Introducción a la Práctica Bibliotecaria en los Estados Unidos*, by Marion Carnovsky, and *La Biblioteca Pública en los Estados Unidos*, based on an earlier publication by Arthur E. Bostwick. Other publications are *Teacher-Librarian's Handbook*, by Mary P. Douglas, *Subject Index to Poetry*, by Herbert Bruncken, *Library Discount Control*, by Oscar Orman, *Principles of College Library Administration*, by William M. Randall and F. L. D. Goodrich, and *Cataloguers' and Classifiers' Yearbook No. 9*. The Association continues to issue six periodicals, the *A. L. A. Bulletin*, the *Booklist*, *College and Research Libraries*, the *Journal of Documentary Reproduction*, the *Hospital Book Guide* and the *Subscription Books Bulletin*.

Other publishers produced *School Library Service in the U.S.*, by A. L. Cecil and W. A. Hoops; *American Public Library Buildings*, by Joseph Wheeler and Alfred Githens; *Library Costs and Budgets* by Emma V. Baldwin and W. E. Marcus; and *The Bookman's Manual*, by Bessie Graham.

OLGA M. PETERSON.

LIBYA. An Italian colony in North Africa. Area, 679,358 square miles; population (Jan. 1, 1939), 888,401, including 793,225 natives (763,179 Moslems and 30,046 Jews), 89,098 Italians, and 6,078 other Europeans. Chief towns (with Jan. 1, 1939, populations): Tripoli, the capital (108,240), Bengasi (64,641), Misurata (45,097), Homs (34,940), and Derna (21,547). Ghadames, Sinauen, Mizda, Murzuk, and Ghat are important caravan stations in the interior.

Production and Trade. Barley, dates, olives, oranges, lemons, almonds, vegetables, salt, sponges, fish, and tobacco were the main products. Livestock (1938): 820,323 sheep, 726,006 goats, 69,670 cattle, 91,782 camels, 55,676 donkeys, mules, and horses. Trade (1938): 882,057,532 lire for imports and 108,961,545 lire for exports (lira averaged \$0.0526 for 1938, \$0.0520, 1939). Shipping (1938): 5,545 ships entered and landed 696,890 tons of freight and 127,458 passengers; 2,549 ships left with 76,190 tons of freight and 122,521 passengers. Roads (1940): 8,342 miles.

Government. Budget (1939-40): 600,115,000 lire. The colony comprises four provinces (Bengasi, Derna, Misurata, and Tripoli), and a military territory in the south (capital, Hun). During October of 1938, by decree, the four provinces were incorporated in the national territory of Italy. Governor and Commander of Armed Forces in Libya, Gen. Ettore Bastico, who was appointed July 26, 1941.

History. Early in 1941 the British Imperial Forces continued to make gains in Libya, the town of Bengasi being captured on Feb. 6, 1941. German air forces entered the campaign in January and German land forces, under the command of Gen. Erwin Rommel, commenced to enter Libya during the latter part of February. The German units began to attack on Mar. 24, 1941, and in about two months had reached the Egyptian border after having by-passed the fortified port of Tobruk, Libya, which was held by British Imperial troops. Many of the British troops had been withdrawn from Egypt and sent to Greece. Later the Germans penetrated into Egypt to Solum and Halfaya and then there was limited military action until Nov. 18, 1941, when the British launched a surprise offensive on a 130-mile front westward into Libya, which by the end of the year 1941, had reached Agedabia where British tanks and airplanes were engaging the remnants of General Rommel's Libyan army. See WORLD WAR.

LIECHTENSTEIN. A principality of Central Europe, adjoining Switzerland on the east. Area, 65 square miles; population (1938 estimate), 12,000. Capital, Vaduz. Corn, wine, fruit, wood, marble are the chief products. Main industries: Cotton spinning and weaving, leather goods, pottery, and livestock raising. Liechtenstein belongs to the Swiss Customs Union; Swiss currency is used. Budget estimates (1941): Revenue, 1,937,200 francs; expenditure, 1,918,705 francs. Public debt (Dec. 31, 1939), 5,600,000 francs (franc averaged \$0.2253 for 1939). Reigning Prince, Francis Joseph II (succeeded Aug. 25, 1938); Administrator, Dr. Joseph Hoop (appointed Aug. 4, 1928).

LIFE SAVING. See COAST GUARD, U.S.; RED CROSS Compare FIRST AID.

LIGHTHOUSES. See COAST GUARD, U.S.

LIGHTING. See ILLUMINATION.

LIPPE. See GERMANY under *Area and Population*.

LIQUOR LEGISLATION. See articles on States as COLORADO and IOWA under *Legislation*; TAXATION.

LIQUOR PRODUCTION. According to the report of the Commissioner of Internal Revenue, total United States tax collections on alcoholic beverages in the fiscal year 1941 amounted to \$829,056,178, as compared with \$624,253,156 in 1940. The increase of \$195,803,022 or 31.4 per cent was due principally to the higher rates imposed by the Revenue Act of 1940. A breakdown of the total shows that \$484,163,478 came from distilled spirits, \$13,186,464, from wines, and \$322,706,236 from fermented malt liquors. Taxes from distilled spirits came to 59 per cent of the total (55.6 in 1940), a record attributed by the Distilled Spirits Institute to imposition of additional Federal taxes for national defense, to concurrent increases of taxes by some States, and to the general upturn in business conditions. The Institute in a press release stated "... the Federal Government's share of the [distillers'] 1940 revenue would provide ten such battleships as the recently launched North Carolina, or fifteen modern aircraft carriers, or ninety-five destroyers or 125 submarines. This single year's collection by the Federal Treasury would provide a fleet of 1,500 huge four-motor bombing planes . . ."

During the fiscal year 11,826 stills were seized by Government officers, having an aggregate mash capacity of 2,056,230 gal., 6,868,078 gal. of mash were destroyed. Also, 275,396 gal. of spirits and 4,752 automobiles and trucks were seized. Total value of private property seized was \$2,424,565. Federal liquor law violators were arrested to the tune of 26,010 persons.

Regulations were altered in 1941 to permit the Basic Permit and Trade Practice Division of the Treasury's Alcohol Tax Unit to deal more stringently with liquor advertisements, especially with objectionable advertising containing patriotic themes, references to the Army or Navy, or appeals to the defense forces. The Division reviewed 76,849 advertisements appearing in 24,787 publications, making a slight increment over that of 1940. Reviews of 4,803 radio programs and 4,250 pieces of point-of-sale advertising were also made.

The accompanying table, condensed from *Industrial Reference Service*, U.S. Department of Commerce, shows the eight-month total, in the major categories, of all alcoholic beverage industries in the United States. According to the Women's Christian Temperance Union, the consumption of legally-sold liquor for the 1941 fiscal year was 1,834,392,741 gal., as compared with 1,849,970,467 in 1940, a decline of 15,577,726 gal. Per capita consumption dropped from 14.077 gal. to 13.96.

UNITED STATES SALES OF ALCOHOLIC BEVERAGES*

Beverage	[1,000 units]		% Change
	1941	1940	
All spirits (tax gal)	93,112	81,134	+14.8
Whisky	77,469	67,139	+15.4
Gin	9,642	9,230	+4.5
Rum	2,675	1,670	+60.2
Brandy	1,210	1,232	-1.1
Cordials and liqueurs	1,560	1,470	+6.1
All malt liquors (bbl)	38,098	35,711	+6.7
	January-July		
	1941	1940	
All wines (wine gal.)	54,112	47,216	+14.8
Still wines	52,574	45,452	+14.6
Vermouth	1,088	1,299	-17.0
Sparkling wines	449	465	-3.4

* Apparent total sales by manufacturers and importers of United States and Foreign Beverages

were made in technical books and poetry and drama.

British book production, much restricted by government control of paper, was 7,581 titles, about half of 1939's output, and about 63 per cent of 1940's. Against the trend, however, books of humor, aeronautics, and topography were more numerous than in either 1940 or 1939. At the year's end publishers were agitating for more liberal paper allowances.

Biography. Of American political figures: volumes 1 and 2 of Irving Brant's *James Madison*; Kenneth B. Umbreit's *Founding Fathers*; Henry Villard's *Lincoln on the Eve of '61*; George Dudley Seymour's *Documentary Life of Nathan Hale*; Alice Lounsberry's *Sir William Phips*; autobiographies: Florence Jaffray Harriman's *Mission to the North*; Hugh R. Wilson's *Diplomat between Wars*; *Holmes-Pollock Letters*, by Justice Holmes and Sir Frederick Pollock, *Backbone of the Herring*, by Curtis Bok; *Pillar to Post*, by Henry H. Curran. English political persons: *Catherine of Aragon*, by Garrett Mattingly; *America's Last King* (George III), by Manfred S. Guttmacher, *Victoria's Heir*, by George Dangerfield; *The Life of Francis Drake*, by A. E. W. Mason; autobiography: Viscount Cecil's *A Great Experiment*. Other political figures: *Grey Eminence* (Father Joseph), by Aldous Huxley; *Hernán Cortés*, by Salvador de Madariaga; *Amazon Throne*, Brazil's royal family, by Bertita Harding; *The Soong Sisters*, by Emily Hahn; autobiographies: Jan Valtin's *Out of the Night*, a revolutionary, *Toward Freedom*, by Jawaharlal Nehru; *Scum of the Earth*, by Arthur Koestler, a French concentration camp; *Men and Politics*, by Louis Fischer; *Ambassador Dodd's Diary*, edited by William E. Dodd, Jr., and Martha Dodd.

American literary figures: Arthur Hobson Quinn's *Edgar Allan Poe*, Frances Winwar's *American Giant* (Whitman), Whitman Bennett's *Whittier*; Forrest Wilson's *Crusader in Crinoline* (Harriet Beecher Stowe); autobiographies: H. L. Mencken's *Newspaper Days*; Ray Stannard Baker's *Native American*, Bayard Veiller's *The Fun I've Had*. About British literary: Peter Quennell's *Byron in Italy*; *The Letters of Joseph Addison*, edited by Walter Graham; Malcolm Elwin's *Savage Landor*; Hugh Kingsmill's *Johnson without Boswell*; Denis Mackail's *Barrie*, Jean Burton's *Sir Richard Burton's Wife*, autobiographies: John Masefield's *In the Mill*; G. B. Stern's *Another Part of the Forest*; Richard Aldington's *Life for Life's Sake*. Others: Crane Brinton's *Nietzsche*; E. M. Butler's *Rainer Maria Rilke*.

Also notable were: *The Secret Diary of William Byrd of Westover*, edited by Louis B. Wright and Marion Tilling; *Alfred I. du Pont*, by Marquis James; *William Henry Welch*, by Simon and James Thomas Flexner; *The Astors*, by Harvey O'Connor; *Tomorrow Will Come*, youth in Russia, by E. M. Almedingen; *Low Man on a Totem Pole*, by H. Allen Smith.

Criticism and History of Literature. Among general works were: *The Intent of the Critic*, edited by Donald A. Stauffer, *The New Criticism*, by John Crowe Ransom; *The Wound and the Bow*, by Edmund Wilson; *Invitation to Learning*, radio talks by Huntington Cairns, Mark Van Doren, Allen Tate; *Reason in Madness*, by Allen Tate; *Ten Heroes*, by David Malcolmson. Histories included: F. O. Matthiessen's *American Renaissance*, the age of Emerson and Whitman; Oscar Cargill's *Intellectual America*, 19th century and contemporary; René Willek's *The Rise of English Literary History*. Reference works: *The Cambridge Bibliography of Eng-*

LITERATURE. English and American. American book production fell off slightly during 1941, with 11,112 titles, 216 fewer than in 1940. Greatest losses were in religious books and histories, while gains

lish Literature, by F. W. Bateson; *The Concise Cambridge History of English Literature*, by George Sampson; *The Oxford Companion to American Literature*, by James D. Hart. About poetry: Louis MacNeice's *The Poetry of W. B. Yeats*; Logan Pearsall Smith's *Milton and His Modern Critics*; Richard Church's *Eight for Immortality*, modern poets. About fiction: Joseph Warren Beach's *American Fiction 1920-1940*; Howard Haycraft's *Murder for Pleasure*, about the detective story; Fannie E. Ratchford's *The Brontës' Web of Childhood*. About drama: *The Dramatic Imagination*, by Robert Edmund Jones; *New Theatres for Old*, by Mordecai Gorelik; *Advance from Broadway*, by Norris Houghton; *History of the Theatre*, by George Freedley and J. A. Reeves; *The Drama of Euripides*, by G. M. A. Grube.

Drama. A nice crop of comedies during 1941: *My Sister Eileen*, by Joseph Fields and Jerome Chodorov; *Arsenic and Old Lace*, by Joseph Kesselring; *The Beautiful People*, *Sweeney in the Trees*, *Across the Board on Tomorrow Morning*, in one volume by William Saroyan; *Claudia*, by Rose Franken; *Lady in the Dark*, by Moss Hart, *Old Acquaintance*, by John van Druten. Plays reflecting war and politics included: Lilliam Hellman's *Watch on the Rhine*; Maxwell Anderson's *Candle in the Wind*; Frederick Hazlitt Brennan's *The Wookey*, Philip Barry's *Liberty Jones*; Elmer Rice's *Flight to the West*. Historical were: *Gracious Majesty*, by Laurence Housman, about Queen Victoria; *The Highland Call*, about the Revolution in North Carolina, by Paul Green, who also published, with Richard Wright, *Native Son*, based on the latter's novel. S. N. Behrman published *The Talley Method* also as *The Mechanical Heart*. See THEATER.

Economics. James Burnham's *The Managerial Revolution* showed the divorce of ownership and control. Harry Scherman's *The Last Best Hope of Earth* established its economic unity. The Nazi economic system was discussed in Thomas Reville's *The Spoil of Europe* and Douglas Miller's *You Can't Do Business with Hitler*. Seymour E. Harris considered *The Economics of American Defense*, as did I. F. Stone in *Business as Usual*. Kemper Simpson, in a book entitled *Big Business, Efficiency, and Fascism*, attacked the first named. Alvin H. Hausen's *Fiscal Policy and Business Cycles* showed how the latter could be controlled. Also: *A Primer of Economics*, by Stuart Chase, and *The Cambridge Economic History of Europe*, vol. i, edited by J. H. Clapham and Eileen Power. Manya Gordon's *Workers Before and After Lenin* found no improvement.

Essays. These included: *The Opinions of Oliver Allston*, by Van Wyck Brooks, mainly literary; *Ideas for the Ice Age*, by Max Lerner, mainly political; *Legal Miscellanies*, by Henry W. Taft; *Of Men and Women*, by Pearl S. Buck; *An Adventure in Education*, by the Swarthmore College Faculty; *The Bachelor Life*, by George Jean Nathan; *1001 Afternoons in New York*, by Ben Hecht; *How to Become Extinct*, by Will Cuppy; and the anthology *A Subtreasury of American Humor*, edited by E. B. and Katherine S. White.

History. In American history appeared: *Reveille in Washington, 1860-1865*, by Margaret Leech; *Secret History of the American Revolution*, by Carl van Doren; *Dictionary of American History*, edited by James Truslow Adams; *The American Nation 1865-1940*, by John D. Hicks; *Everyday Things in American Life, 1776-1876*, by William Chauncy Langdon; *The Army of the Tennessee*, by Stanley F. Horn; *Hands Off*, a history of the Monroe Doctrine, by Dexter Perkins; two river histories: *The*

Colorado Conquest, by David O. Woodbury, and *The Charles*, by Arthur Bernon Tourtellot; *Louisiana Hayride*, by Harnett T. Kane, about the Huey Long episode. In European history: Carlton J. H. Hayes' *A Generation of Materialism, 1871-1900*; Jacques Barzun's *Darwin, Marx, Wagner*, a history of ideas; Edward S. Forster's *A Short History of Modern Greece, 1821-1940*, *The Cambridge History of Poland, 1697-1935*, edited by W. F. Reddaway and others; two studies in the French Revolution: Ralph Korgold's *Robespierre and the Fourth Estate*, and R. R. Palmer's *Twelve Who Ruled*. In English history: Arthur Bryant's *Pageant of England, 1840-1940*; Robert Graves and Alan Hodge's *The Long Week End, 1918-1939*, a social history; Walter S. Hinchman's *England*. Others were: C. W. de Kiewet's *A History of South Africa*; William H. Chickering's *Within the Sound of These Waves*, about Hawaii; Lesley Bird Simpson's *Many Mexicos*; and M. Rostovtzeff's *The Social and Economic History of the Hellenistic World*.

Juvenile. Children might read about animals, as *My Friend Flicka*, a horse, by Mary O'Hara, or *Adolphus*, a dolphin, by William Rose Benét; or biography, as *Poor Richard*, by James Dougherty, history, as *Lake of Gold*, Canadian, by John Buchan, or economics, as *From Man to Machine*, by Agnes Rogers; or folklore, as *Paul Bunyan*, by Esther Shepherd; or a locality, as *The Luck of the Comstocks*, about Block Island, by Maribelle Cormack and William P. Alexander, or fantasy, as *The Story of Simpson and Sampson*, by Munro Leaf, or *The Flying Locomotive*, by William Pène du Bois.

Novels. Remarkable successes were few, but A. J. Cronin's *The Keys of the Kingdom*, about a modern saint, came as close as any. F. Scott Fitzgerald's unfinished *The Last Tycoon* and Budd Schulberg's *What Makes Sammy Run?* were about Hollywood. Marcus Goodrich's *Delilah* was a Navy destroyer. Edna Ferber's *Saratoga Trunk* revealed the resort. George Stewart's *Storm* was meteorological. Alvah Bessie gave an unskilled worker's tragedy in *Bread and a Stone*, while William McFee dissected writers in *Spenlove in Arcady*. James Hilton's *Random Harvest* involved loss of memory. Gertrude Stein puzzled in *Ida*. Neurotics appeared in Mark Schorer's *The Hermit Place* and Carson McCullers' *Reflections in a Golden Eye*. James M. Cam's *Mildred Pierce* mothered a coloratura. Virginia Woolf's *Between the Acts* was her last. Ben Ames Williams' *The Strange Woman* bothered men.

Reflecting the war were: Eric Knight's *This Above All*, about Britain; Robert Nathan's *They Went On Together*, about suffering children; Lin Yutang's *A Leaf in the Storm*, about a Chinese girl; Frederic Prokosch's *The Skies of Europe*, just before the war; Maurice Hindus' *To Sing with the Angels*, the Nazis in Moravia; Storm Jameson's *Cousin Honoré*, the Nazis in Alsatia. Satirical novels included: John P. Marquand's *H. M. Pulham, Esq.*, on Bostonians; and Dalton Trumbo's *The Remarkable Andrew*, on politicians. Regional novels: Mary Ellen Chase's *Windswept*, Maine; Barbara Tunnell Anderson's *The Days Grow Cold*, the deep South; Robert Faherty's *Big Old Sun*, the Florida keys; August Derleth's *Village Year*, Wisconsin.

Historical: Louis Bromfield's *Wild Is the River*, New Orleans in the Civil War; John Masefield's *Conquer*, revolt in Byzantium; Eleanor Dark's *The Timeless Land*, settlement of Australia; Marguerite Steen's *The Sun Is My Undoing*, slave trade; C. S. Forester's *The Captain from Connecticut*, war of 1812; Allis McKay's *They Came to a River*, the Columbia; John Cowper Powys' *Owen Glendower*; Stuart Cloete's *The Hill of Doves*, South Africa, the

1880's; Vardis Fisher's *City of Illusion*, Virginia City; Upton Sinclair's *Between Two Worlds*, Peace Conference to market crash; Clifford Dowdley's *Sing for a Penny*, Virginia, late 19th century. Ellen Glasgow showed Richmond society in *In This Our Life*. A notable first: *Whistle Stop*, by Maritta M. Wolff. Charles Nordhoff and James Norman Hall gave adventure in *Botany Bay*. Fantasy combined with humor in *The Incomplete Enchanter*, by L. Sprague de Camp and Fletcher Pratt.

Poetry. A number of collections appeared, such as: Louis MacNeice's *Poems 1925-1940*, *Poems*, by Ridgely Torrence; *Poems 1930-1940*, by Horace Gregory; John Peale Bishop's *Selected Poems*; Louise Bogan's *Poems and New Poems*; *Collected Poems*, by Walter de la Mare, who also published *Bells and Grass*. Narratives included: *The Dust Which Is God*, semiautobiography by William Rose Benét; *The Mayfield Deer*, by Mark van Doren; *Shenandoah*, by Delmore Schwartz; *The Nine Days' Wonder*, by John Masfield, about Dunkirk. Other important books of poetry were: W. H. Auden's *The Double Man and New Year Letter*; Marianne Moore's *What Are Years*, Robinson Jeffers' *Be Angry at the Sun and Other Poems*; T. S. Eliot's *The Dry Salvages*; Frederic Prokosch's *Death at Sea*; Selden Rodman's *The Airmen*, Siegfried Sassoon's *Rhymed Ruminations*; E. E. Cummings' *50 Poems*; Marya Zaturenska's *The Listening Landscape*, Dilya Bennett Lang's *Another England*, Paul Engle's *West of Midnight*, Alfred Noyes' *Shadows on the Down*; John Gould Fletcher's *South Star*. Important anthologies were: Richard Aldington's *The Viking Book of Poetry*, and C. Day Lewis and L. A. G. Strong's *A New Anthology of Modern Verse, 1920-1940*.

Politics. Asian affairs were discussed in: William C. Johnston's *The United States and Japan's New Order*; Edgar Snow's *The Battle for Asia*, especially the communists'; Mark J. Gayn's *The Fight for the Pacific*, Woodburn Remington's *Cross Winds of Empire*, Felix M. Keesing's *The South Seas in the Modern World*; Virginia Thompson's *Thailand*; Florence Horn's *Orphans of the Pacific*, the Philippines; Joseph Barber, Jr.'s *Hawaii*, Hallett Abend's *Japan Unmasked*; Wilfrid Fleisher's *Volcanic Isle*, Japan. Latin America was dealt with in: *Meet the South Americans*, by Carl Crow, *The Other America*, by Lawrence Griswold, *Inside Latin America*, by John Gunther; *Central America*, by Charles Morrow Wilson, *The Caribbean Danger Zone*, by J. Fred Rippey; *Good Neighbors*, by Hubert Herring.

Many books on Europe seemed out-of-date at year's end, but they included: *Night Over Europe*, by Frederick L. Schuman; *Versailles Twenty Years After*, by Paul Birdsall; *Problems of Modern Europe*, by J. Hampden Jackson and Kerry Lee, pictograms; *Dictators and Democrats*, interviews with leaders, edited by Lawrence Fernsworth; *Turkey*, by Emil Lengyel, *The Untamed Balkans*, by Frederic W. L. Kovacs, *Spurs on the Boot*, about Italy, by Thomas B. Morgan, *The Myth of the Total State*, by Guenther Reimann; *Metapolitics*, the Nazis' intellectual origins, by Peter Viereck; *Finland Forever*, by Hudson Strode, *Undefeated*, the Zionist case, by Solomon Goldman.

World-wide views were taken in: William Henry Chamberlin's *The World's Iron Age*; Laurence Housman's *The Preparation of Peace*; Julian S. Huxley's *Democracy Marches*; Louis Adamic's *Two Way Passage*, for postwar American administration of Europe; C. D. H. Cole's *Europe, Russia, and the Future*; John Strachey's *A Faith to Fight For*.

Most concerned with the United States were: four more volumes of *The Public Papers and Ad-*

dresses of Franklin D. Roosevelt, for 1937-1940; *Public Policy and the General Welfare*, by Charles A. Beard, isolationist; *The Struggle for Judicial Supremacy*, by Robert H. Jackson; *Our Constitution*, by Beryl Harold Levy, *Roosevelt. Dictator or Democrat?* by Gerald W. Johnson; *The New Centralization*, the decay of state powers, by George C. S. Benson; *Administration and the Rule of Law*, by J. Roland Pennock; *The Ground We Stand On*, by John Dos Passos, *The Atlantic System*, by Forrest Davis. Innumerable pamphlets gave programs for democracy, whose ideal was also explained in two anthologies: *Fountainheads of Freedom*, by Irwin Edman and Herbert W. Schneider, and *The Democratic Spirit*, by Bernard Smith. Clarence Streit advocated *Union Now with Great Britain*. Notable was W. Ivor Jennings' *The British Constitution*.

Religion. Much influenced by current events were: *The Nature and Destiny of Man*, by Reinhold Niebuhr; *The Theology of Politics*, by Nathaniel Micklem, *Christian Truth in History*, by Hugh Miller; *Faith for Today*, edited by George V. Denny, seeking common ground among Protestants, Catholics, Jews, Hindus; *The Creed of Christ*, by Gerald Heard, advocating mysticism. Dorothy L. Sayers, in *The Mind of the Maker*, compared God to the creative artist. Kenneth Scott Latourette published vol. iv of *A History of the Expansion of Christianity*, and Robert H. Pfeiffer *Introduction to the Old Testament*.

Short Stories. These included: Elizabeth Bowen's *Look at All These Roses*; Pearl S. Buck's *Today and Forever*, laid in China; Elizabeth Madox Roberts' *Not By Strange Gods*; James Reid Parker's *Attorneys at Law*; Sally Benson's *Junior Miss*, Ludwig Bemelmans' *Hotel Splendide*, Martha Gellhorn's *The Heart of Another*; Thomas Wolfe's *The Hills Beyond*, Christopher La Farge's *The Wilsons*; Jesse Stuart's *Men of the Mountains*.

Sociology. General works included: Michael Roberts' *The Recovery of the West* and Pitruum A. Sorokin's *The Crisis of Our Age*, both concerned with future social transformations; J. G. Crowther's *The Social Relations of Science*, Julian Huxley's *Man Stands Alone*. Dixon Wecter studied hero-worship in *The Hero in America*, as W. J. Cash exposed *The Mind of the South*. Eleven experts reported *British Life and Thought*. Histories included: Mauritz A. Hallgren's *Landscape of Freedom*, about personal liberty, and V. F. Calverton's *Where Angels Dared to Tread*, about communistic experiments. Eugene Lyons' *The Red Decade* exposed communism in America.

Field studies included: Leo C. Rosten's *Holly-wood*; Jonathan Daniels' *Tar Heels* (North Carolinians); Heath Bowman's *Hoosier*; Edwin Corle's *Desert Country*; James Agee and Walker Evans' *Let Us Now Praise Famous Men*, about three tenant families; Erskine Caldwell and Margaret Bourke-White's *Say, Is This the U.S.A.?*; Frances Cooke Macgregor's *Twentieth Century Indians*; Arthur Raper and Ira de A. Reid's *Sharecroppers All*; James C. Furnas and others' *How America Lives*; Oliver Pilat and Jo Ransom's *Sodom by the Sea*, about Coney Island.

Travel. The western hemisphere was highly favored, as in: William Lytle Schurz's *Latin America*; Margaret Culkin Banning's *Salud!* about South America; Nicol Smith's *Bush Master*, about Surinam; Louis J. Halle's *River of Ruins*, about Central America; Dorothy Duncan's *Here's to Canada!*; Kim Schee's *Cantina*, about Mexico, as was John Steinbeck and Edward F. Ricketts' *Sea of Cortez* and Clifford Gessler's *Pattern of Mexico*. Concerned with the United States were; Stanley Vestal's

Short Grass Country; Nancy Wilson Ross's *Farthest Reach*, about Washington and Oregon, and the Writers' Program guides to *Alabama*; *Arkansas*; *Colorado*; *Indiana*; *Louisiana*; *Michigan*; *Missouri*; *Nevada*; *South Carolina*; *Utah*; *Wisconsin*; *Wyoming*; *West Virginia*, *Washington*; and pictorial guides to *Vermont*; *Virginia*; *Montana*. Krishnalal Shridharani compared *My India*, *My America*. Frederic M. Gardiner went *Cruising North America*.

Impressive was Rebecca West's *Black Lamb and Grey Falcon*, about Yugoslavia. Owen Lattimore took *Mongol Journeys*, and Eileen Bigland went *Into China* in war-time. Negley Farson found Africa *Behind God's Back*. James Ramsey Ullman's *High Conquest* was about mountaineering.

War. The year's great success was William L. Shirer's *Berlin Diary*, to the spring of 1941. Others dealing with Germany were: Joseph C. Harsch in *Pattern of Conquest*, and Wythe Williams and Albert Parry in *Riddle of the Reich*. War on the Low Countries was described in *Juggernaut over Holland*, by E. N. van Kleefens, and *Under the Iron Heel*, about Belgium, by Lars Moen. Foreign correspondents' reports included: Virginia Cowles' *Looking for Trouble*; Leland Stowe's *No Other Road to Freedom*; Robert J. Casey's *I Can't Forget*; Pierre van Paassen's *That Day Alone*; these covered more than one country. Fifth Columns were described in Richard Wilmer Rowan's *Terror in Our Time*. Britain's war life was revealed in: *Blood, Sweat, and Tears*, Winston S. Churchill's addresses; *The Wounded Don't Cry* and *A London Diary*, by Quentin Reynolds; *Their Finest Hour*, edited by A. Michie and W. Graebner; *England's Hour*, by Vera Brittain; *War Letters from Britain*, edited by Diana Forbes-Robertson and Roger W. Straus, Jr.; *Out of the People*, by J. B. Priestley; *Strictly Personal*, by W. Somerset Maugham; *Digging for Mrs. Miller*, by John Strachey; *Where Stands a Winged Sentry*, by Margaret Kennedy; and many others.

Technical studies included: *Sea Power in the Machine Age*, by Bernard Brodie; *War in the Air*, by David Garnett; *What the Citizen Should Know about the Army*, by Harvey S. Ford; *the Navy*, by Hanson W. Baldwin; *the Coast Guard*, by Hickman Powell; *The Armed Forces of the Pacific*, by W. D. Puleston; *Hitler Cannot Conquer Russia*, by Maurice Hindus; *Fishermen at War*, by Leo Walmsley; *America and Total War*, by Fletcher Pratt. Historical were: *From Gibraltar to Suez*, by Lord Strabolgi; *The Armed Horde 1793-1939*, by Hoffman Nickerson; and *Great Soldiers of the Two World Wars*, by H. A. De Wield.

America was exhorted in *What Mein Kampf Means to America*, by Francis Hackett; *If War Comes to the American Home*, by S. F. Porter, and Pendleton Herring's *The Impact of War*, besides numerous pamphlets. Asia's war was described in *Dawn over Chungking*, by Adet, Amor, and Meimei Lin; *Dawn Watch in China*, by Joy Homer; and *War and Diplomacy in Eastern Asia*, by Claude A. Buss. Fallen France appeared in: C. Denis Freeman and Douglas Cooper's *The Road to Bordeaux*, and Thomas Kernan's *France on Berlin Time*. Vivid personal narratives were *Two Survived*, by Guy Pearce Jones, and *We Escaped*, by Twelve Refugees. Also: *Low on the War*, cartoons by David Low.

See *Bibliography* under the various topics; LIBRARY PROGRESS; PULITZER PRIZES. For translations into English and exiled writers in the United States, see FRENCH LITERATURE, GERMAN LITERATURE, ETC. BENFIELD PRESSY.

LITHOGRAPHY. See the article ART under *Prints*.

LITHUANIA. A former Baltic republic, which proclaimed its independence from Russia on Feb. 16, 1918, and was reannexed by the Soviet Union Aug. 3, 1940, as a constituent republic. In June-July, 1941, it was occupied by German forces. Kaunas was the provisional capital of Lithuania prior to Aug. 15, 1940, when Vilna was proclaimed capital of the Lithuanian Soviet Republic.

Area and Population. Including the Vilna territory acquired from the Soviet Union Oct. 10, 1939, and excluding Memel Territory (q.v.), ceded to Germany Mar. 22, 1939, Lithuania had an area of 22,964 square miles and an estimated population of 2,879,070 on Dec. 31, 1939. The newly annexed Vilna territory comprised 2,570 square miles with 457,500 inhabitants. Estimated populations of the chief cities on Jan. 1, 1939, were: Vilna (Vilnius), 208,900; Kaunas, 152,365; Šiauliai (Shavli), 31,299; Panevežys (Poneviej), 26,508.

Education and Religion. About 15 per cent of the adult population was illiterate in 1939. Educational statistics for 1938-39 were: Primary, 2,335 schools with 298,429 pupils; secondary, 83 schools with 19,539 pupils; normal, 5 schools with 605 students; special, 147 schools with 11,198 students; university, 1 (at Kaunas) with 3,041 students in 1938. In January, 1940, the University of Vilna was established. Roman Catholics formed 80.5 per cent of the population at the 1923 census, Protestants, 9.5, Jews, 7.3; Greek Orthodox, 2.5.

Production. About 77 per cent of the population in 1939 was engaged in agriculture and 10 per cent in commerce, industry, and transportation. Yields of the chief crops in 1939 were (in metric tons): Wheat, 251,200; barley, 246,700; rye, 653,400; oats, 401,700; potatoes (1938), 2,118,231; flax fiber (1938), 25,784. Livestock on June 30, 1939, included 1,103,550 cattle, 1,223,600 sheep, 1,117,080 swine, and 520,710 horses. Forests, mostly pine, covered 2,645,000 acres. Industrial establishments (1938) numbered 1,441, with 40,818 employees and an output valued at 480,000,000 lits.

Foreign Trade, etc. Imports in 1939 were 169,400,000 lits; exports (chiefly butter, grain, bacon, lard, meats), 203,200,000 lits. Great Britain was the leading pre-war export market, Germany the chief source of imports. Budget returns for 1939 were: Receipts, 361,780,000 lits; expenditures, 356,550,000 lits. Public debt on Jan. 1, 1940, 134,146,600 lits (domestic, 65,231,200; foreign, 68,915,400). The lit exchanged practically at par (\$0.1693) during 1936-38 and at \$0.1674 in 1939. Previous to the Russian annexation, Lithuania had 1,680 miles of railway line, 20,272 miles of roads and highways, and about 1,600 miles of waterways; its only port was lost with the cession of Memel to Germany.

Government. The democratic system established by the Constitution of Aug. 6, 1922, collapsed on Dec. 17, 1926, when the conservative Nationalist Union party established a single-party dictatorship, headed by President Antanas Smetona. He was re-elected by a board of electors Dec. 11, 1932 and Nov. 14, 1938. The Nationalist Union adopted fascism as its ruling principle Dec. 16, 1933. A new Constitution promulgated Feb. 12, 1938, was drawn up by a parliament (*Seimas*) chosen entirely from members of the Nationalist Union. It vested wide executive powers in a President, elected by parliament for seven years, and his Council of Ministers. Members of parliament were elected for five years from a one-party list by universal, secret suffrage. Representatives of two outlawed opposition parties, the Christian Democrats and Agrarian So-

cialists, gained representation in the new cabinet formed by Premier Antanas Merkys (Nationalist Union) on Nov. 21, 1939, as a result of the crisis precipitated by the conclusion of the Soviet-Lithuanian mutual assistance pact of Oct. 10, 1939 (see *YEAR BOOK*, 1939, p. 443).

This pact authorized the establishment of Soviet military and air bases in Lithuania, but safeguarded the republic's independence and social-economic system. However, on June 15, 1940, Soviet troops occupied the remainder of the country, and established a pro-Soviet government. Controlled elections, held July 14-15, produced a pro-Communist parliament, which on July 21 unanimously adopted a resolution for union with the U.S.S.R. Its petition was accepted by the Supreme Soviet in Moscow August 3, when Lithuania became the 14th constituent republic of the Soviet Union. On August 24-25 the newly elected parliament approved a soviet constitution, under which the elimination of the capitalist, bourgeois institutions was carried out (see *YEAR BOOK* for 1940, p. 416-417). See below for developments in 1941.

History. Germany's attack upon Russia on June 22, 1941, was the signal for a revolt of Lithuanian anti-Communist elements against the Soviet garrison and Communist regime. The revolt was led by the so-called Lithuanian Freedom Fighters, an underground organization established with German assistance by the former Lithuanian Minister to Berlin, Kazys Skirpa. Rallying some 125,000 Lithuanians to their cause, the Freedom Fighters gained control of Kaunas before German troops entered that city on June 24. They assisted the Germans in clearing Soviet troops from the rest of the country (see *WORLD WAR*) and in suppressing Communist partisan bands.

On June 23 the Lithuanian patriots proclaimed over the Kaunas radio their independence from Russia and the establishment of a free government. It was headed by Prapolernis, the leader of the Freedom Fighters, pending the arrival of Kazys Skirpa from Berlin. When this new government refused to play the role of puppet to Berlin, the Germans on August 6 dissolved it and made Lithuania a district in the newly-created Ostland Province of the Reich. (Ostland consisted of the three Baltic republics and White Russia.) A German, Dr. Adrian von Renteln, was appointed Commissioner General for Lithuania under the Reich Commissioner for Ostland.

Lithuania was not only deprived of its political independence but also subjected to the same economic demands as the other two Baltic States (see *ESTONIA under History*). Resentment at this treatment spread. The Lithuanian Freedom Fighters began an agitation for the termination of German rule. This led the German authorities on October 11 to "liquidate" the organization and arrest its leaders. The Germans were said to have declared that there could be "no more question of the Baltic States recovering any kind of political life." Lithuanian nationalists thereafter based their hope of independence upon the United States and Britain, which refused to recognize either the Soviet or German conquests of the Baltic States. After the entrance of the United States into the war, the Lithuanian Minister to Washington formally aligned his country with the United Nations. "Lithuania's prime and ultimate task," he said on December 23, "is to get rid of German enslavement and to restore sovereign rights to her people."

Antanas Smetona, President of Lithuania, who fled to Germany upon the Soviet annexation in 1940, arrived in the United States in March, 1941,

He said the German Government had forced him to leave Berlin for Switzerland in September, 1940, because his presence endangered Russian-German amity. The Vatican radio reported February 28 that former Premier Leonas Bistras of Lithuania had died in a Soviet prison. A typhus epidemic was reported in Lithuania toward the end of 1941.

See *GERMANY under History*.

LIVESTOCK. Strong consumer demand for meat products, coupled with heavy government purchases of certain items, particularly pork and lard, pushed the cash farm income from meat animals during 1941 to approximately three billion dollars, a figure attained only twice before (1928 and 1929) during the past twenty years. This represents a sharp increase over the 1940 total of 2,390 million dollars, although far short of the four billion dollar level reached in 1918 and 1919.

The farm production campaign for 1942 announced by the U.S. Department of Agriculture (qv) in September, 1941, placed major emphasis on increased production of animal products. The 1942 goals called for the slaughter of 793,288, and 229 million hogs, cattle, and sheep respectively, increases of about 15, 15, and 2 per cent over 1941 levels. It appears certain that total meat production in 1942 will be the greatest in history, probably close to 21 billion lb. as compared to the 1941 total of about 19 billion lb. and the 1936-40 average of 17.2 billion lb. Per capita consumption of all meats both in 1940 and 1941 was approximately 140 lb., but promised to be considerably higher in 1942.

Conditions for livestock production were generally favorable during 1941. Feed supplies were abundant, with the drought-stricken east, the only section of the country generally short on pasture and hay crops. The 1941 production of the four principal feed grains was estimated by the U.S. Department of Agriculture to total 106.6 million tons, or 7 per cent above that of 1940. Total hay production was placed at about 94 million tons which, coupled with a substantial carryover, gave the largest supply in twenty years. The production of wheat millfeeds and protein concentrates ranged from slightly below to 40 per cent above 1940 levels for the various products. The total supply was adequate, but prices advanced sharply in the closing months of the year. The ratio of hog prices to feed prices was far more favorable to the swine producer in 1941 than during the preceding year, while the beef-feed price ratio was similar for most months of the two years, but somewhat less favorable for the cattle feeder near the close of 1941.

The total number of cattle of all ages in the United States stood at about 71,660,000 on Jan. 1, 1941, an increase of 2.9 million head during 1940. Slightly over half of this total was kept for milk, the remainder primarily for beef production. With the upswing in numbers continuing during the year, it was estimated that the total on Jan. 1, 1942, closely approached the pre-drought (1934) peak of 74.2 million head. The marketing of cattle and calves for slaughter ranged above 1940 levels throughout the year. Cattle and calves slaughtered under Federal inspection totaled 10,945,906 and 5,461,042 head respectively, 12 and 2 per cent larger than in 1940. Total dressed weight of approved carcasses included 5,739.2 million lb. beef and 599.1 million lb. veal, 15 and 5 per cent respectively greater than in 1940, indicating that both the cattle and calves marketed in 1941 were somewhat heavier than in 1940.

The July-December movement of stocker and

feeder cattle into Corn Belt feed lots was about 17 per cent smaller than during the corresponding period of 1940, with only November and December shipments exceeding the 1940 levels. Feeding operations in states west of the Corn Belt promised to be larger, but the total number of cattle finished in the spring and summer of 1942 will probably be below the record level of 1941, although still large compared with other recent years. The general level of cattle prices averaged about \$1 per hundred lb. higher in 1941 than in 1940. Farmers received 9.38 cents per lb for cattle and 11.22 cents per lb. for veal calves in mid-December as compared with 7.84 and 9.01 cents respectively a year earlier.

The down swing in hog production, which started in 1940, was quickly checked as sharply increasing prices made it a more profitable farm enterprise. The spring pig crop numbered slightly over 50 million head or about the same as in 1940. The number of pigs raised in the fall of 1941 was placed at 35.5 million or 18 per cent larger than the 1940 fall crop. The total 1941 pig crop exceeded 85 million head, about 6.5 per cent larger than that of 1940 and only 2 per cent below the record crop of 1939. Exceptionally heavy marketing in the closing months of 1940 reduced the number of hogs available for slaughter in 1941 below the 1940 level. A total of 46,519,757 hogs were slaughtered under Federal inspection, yielding a total dressed weight of about 8,434.4 million lb. Numbers and dressed weight were 8 and 3 per cent respectively below those of 1940. U.S.D.A. estimates placed the number of sows to farrow in the spring of 1942 at nearly 10 million head, an increase of about 28 per cent over 1941, which points to an all time high in swine numbers during the coming year. Hog prices, which persisted at a disastrously low level during 1940, soared to the highest point in over four years, with Chicago prices ranging above \$10 per 100 lb. after June. Farmers received an average of \$10.21 per cwt in mid-December against \$5.59 a year earlier. To stimulate continued high production, the government, in September, 1941, guaranteed to support hog prices at not less than 85 per cent of parity to the end of 1942.

The number of stock sheep on farms and ranches on Jan. 1, 1941, approached 56 million head, an increase of about 2 per cent during 1940. The 1941 lamb crop of 34.5 million head set a new high record, exceeding the previous record crop of 1940 by 5 per cent and the 1930-39 average by 13 per cent. Federally inspected slaughter of sheep and lambs totaled 18,124,531 head or 4 per cent more than in 1940, while the total dressed weight of 750.1 million lb. was 7 per cent more than for 1940. Evidence at the end of the year indicated that a considerably larger number of sheep and lambs would be fattened during the 1941-42 feeding season than a year earlier. Movement of feeder lambs into the Corn Belt feedlots from July to the end of the year was about 5 per cent higher than in 1940 and feeding operations were increased in a number of Western states, particularly Colorado. Prices of slaughter lambs were substantially higher throughout 1941 than in 1940. The mid-December price of lambs on farms averaged \$9.86 per 100 lb. against \$7.88 a year earlier.

Cold storage stocks of meat products at the end of the year included 135,813,000 lb. frozen and cured beef, 469,056,000 lb. frozen and cured pork, 7,951,000 lb. frozen lamb and mutton, and 185,445,000 lb. lard and rendered pork fat. These quantities represented 136, 89, 149, and 121 per cent respectively of the 1937-41 average. The encourag-

ing feature of this situation was the materially lower stocks of pork and lard than a year earlier when these surpluses created an annoying problem. Direct government purchases of pork products from March to December, 1941, mainly for lend-lease shipments, included about 243 million lb. cured and frozen pork, 230 million lb. canned pork, and 326 million lb. of lard, quantities equivalent to about 10 per cent of the pork and 22 per cent of the lard produced under Federal inspection during this period. An Aug. 1, 1941, pork and lard were removed from the list of foods purchasable with Blue Stamps under the Surplus Food Removal Program. During the period May, 1939, to July, 1941, the sale of pork and lard under this plan totaled about 34½ million dollars, or nearly one third of all food purchases.

Government price control of animal products entered the picture late in the year when ceiling prices were placed on lard and other fats and oils (except butter), wool, and hides.

While the total number and value per head of all other types of livestock were higher in 1941 than in 1940, the number of horses and mules on farms was about 309,000 less, and the average value per head \$9 less on Jan. 1, 1941, than a year earlier. This trend has been under way for the past two decades, while the use of tractors for farm power has steadily increased. The national armament program may result in a growing shortage of mechanical power on farms and an increasing dependency on animal power.

Foreign Trade. The balance of trade in animals and animal products during 1941 shifted to an excess of exports over imports whereas in recent years imports have exceeded exports by a considerable margin. According to data compiled by the U.S. Department of Commerce, the total value of export items, both edible and inedible, not including fish, fur, and wool, during the first 9 months of 1941 was \$156,945,832 as compared with \$65,928,387 for the corresponding period of 1940. Imports for the same period totaled \$131,589,777 in 1941 and \$102,492,718 in 1940. Exports of meat products, including edible fats and oils, for the same period in 1941 were valued at \$72,280,953 against imports of \$16,855,094. Corresponding values for 1940 were \$29,623,929 and \$14,159,604. Lard was again the largest single export item. Heavy lend-lease shipments plus increased sales in the Western Hemisphere raised the export of this commodity 90 per cent above the 1940 total of 201 million lb. Canned pork was a close second in value, the export of which was nearly ten times greater in 1941 than in 1940. Hides and skins led all other import items, accounting for about 42 per cent of the total value. The import of canned beef, mainly from Argentina, Brazil, and Uruguay, was about 37 per cent above the 1940 total of \$6,911,000. Approximately 17 per cent more cattle, mainly from Canada and Mexico, were imported for slaughter in 1941 than the 630,211 brought in during 1940. The new U.S.-Argentina agreement, effective Nov. 15, 1941, provided for significant reduction in the duty on such important animal products as canned, pickled, and cured beef, hides, coarse wool, casein, and Italian type cheese, pointing to a greater volume of import of these items during the coming year.

World Conditions. Reliable data on 1941 livestock populations in European countries were not generally available. All indications, however, pointed to steadily decreasing meat supplies on the continent. Denmark, one of the most important exporting countries, reported about 37 and 7 per cent fewer hogs and cattle respectively in the summer of 1941

than a year earlier, and even more drastic reductions appear to have taken place in the Netherlands. The hog situation appeared somewhat better in the Danube Basin countries which are less dependent on feed imports than those in northern Europe. Late reports from Hungary, however, showed a scarcity of fat hogs and an acute lard shortage despite relatively large stocks of feeder pigs. The number of hogs in Germany is believed to have been reduced considerably from the high level of 1940, and stocks available in surrounding countries for import were certainly much lower. Cattle, sheep, and hog numbers in Sweden were significantly lower at the beginning of 1941 than a year earlier and since Apr. 1, 1941, all meat products have been strictly rationed. Livestock numbers, particularly hogs and poultry, in the United Kingdom have been systematically reduced in the face of dwindling feed supplies. Dairy cattle have been in a favored position in an effort to maintain a fairly adequate supply of fresh milk. The Empire Countries, South America, and the United States contributed heavily to Britain's meat supply during the year. New Zealand and Australia, faced with a severe shipping problem, made marked improvement in dehydrating processes, removing of bone and canning of meat so that a greater amount of food is being stored and shipped in a smaller space. Storage stocks were reduced and the meat situation in both countries was improved in the closing months of the year. The United Kingdom tentatively agreed to purchase around 275,000 tons of New Zealand meat during the 1941-42 meat year. Canadian pork production continued at a high level under the stimulus of the contract to supply Great Britain with 8 million lb. of bacon weekly. A new agreement for the year beginning November 1 called for an increase in bacon delivery to an average of 11.5 million lb weekly. Important meat exporting countries of South America found more favorable market outlets in 1941 than in the previous year. British purchases of Argentine meat for the year ending Aug. 31, 1941, included about 375,000 tons of fresh and cured beef, 30,000 tons of mutton, and 10,000 tons of pork. Uruguay faced a shortage of slaughter cattle late in the year, largely due to heavy slaughtering to fill British orders. A considerably greater volume of animal products moved from these countries to the United States during the year than in 1940, with wool and hides being particularly in demand.

See AGRICULTURE, U.S. DEPARTMENT OF under *Animal Industry Research*; DAIRYING; LEATHER; VETERINARY MEDICINE; countries under *Production*.

E. C. ELTING.

LIVING COSTS AND STANDARDS. Living costs in the large cities of the United States rose almost 10 per cent in the year 1941. Since the outbreak of the war in Europe, the increase has reached 12.1 per cent, as compared with the slightly greater advance (14.5 per cent) in the first 28 months of the last World War. For many families, incomes increased more rapidly than the cost of living over the last year. According to figures from the Department of Commerce, the total national income was 22.6 per cent larger in 1941 than in 1940. (See NATIONAL INCOME.) Employment and overtime work in manufacturing industries increased greatly in 1941, resulting in correspondingly large increases in the earnings of most factory wage earners. The Department of Commerce figures show total wages and salaries in manufacturing and in other types of employment in 1941 as 24.8 per cent greater than in

1940. The percentage rise in farm incomes was even larger. Total farm incomes in 1941 were 41.2 per cent above the 1940 total. Corporate profits were 30.3 per cent, and payments in interest and dividends, 5.3 per cent higher in 1941 than in 1940. These figures must not be interpreted, however, to mean that all families had increased incomes in the last year. Many did not and those with fixed incomes have suffered a decrease in purchasing power because of higher living costs. See LABOR CONDITIONS under *Wages*.

There has been a tremendous variation in the movement of living costs in different cities. In towns especially affected by defense activities, the advances have been much larger than in centers like New York and Kansas City where the relative increase in employment has not been so great. In shipbuilding centers like Norfolk and Mobile the cost of living rose by 14-16 per cent in 1941, and in Seattle, Jacksonville, and Savannah the increases were more than 12 per cent. The advances have also been large in the smaller defense centers where an influx of defense workers has resulted in greatly increased demand for housing and in an unusually large rise in rents. For example, in Clinton, Ia., a town of about 26,000, with a number of defense contracts where employment has been increasing rapidly living costs rose 10.7 per cent over the year. The total rental bill to moderate-income families in Clinton was up 7 per cent over the year; food costs were up 15.6 per cent, clothing, 13.1 per cent, housefurnishings, 12 per cent, while miscellaneous goods and services and fuel, electricity, and ice rose 8.6 and 4.1 per cent respectively. In general the rise has been greater in the Southeast than in other sections of the country as large military encampments there, as well as increased industrial activity, have considerably increased demand for housing and for consumers' goods. See DEFENSE HOUSING.

Food prices, which increased 16.2 per cent over the year from Dec. 15, 1940, were the most important factors in determining the rise in living costs during 1941. Food purchases make up more than one-third of the expenditures of moderate-income families, and the increase in food prices has borne heavily on the pocket books of the families whose earnings have not kept up with the rise in living costs. Increased consumer incomes, government purchases of food for the army under the Lend-Lease Act, shortages in shipping facilities and some speculative activity combined to produce the rise in food costs. Beginning in November, 1940, food prices began a rapid rise which continued until November, 1941. From mid-November to mid-December, 1941, little change occurred in the total food bill of moderate-income families since increases in many prices were offset by large seasonal declines in prices for pork, eggs, and oranges and lower prices for butter. Very large increases have occurred in the prices of commodities for which the country is dependent on imports such as coffee, tea, and sugar. Government purchases for the Army and for shipment abroad contributed largely to the advances in prices for meats and dairy products, fats and oils, eggs, dried fruits, vegetables, and canned fish. See AGRICULTURE

Clothing costs increased 13 per cent over the year with much higher prices for men's work shirts and trousers, work shoes, overalls, women's hosiery, and percale and woolen dresses. Prices of work shirts and overalls increased by more than 25 per cent and percale dresses by almost 38 per cent. Silk hose were up by almost 20 per cent. The shortage caused by cessation of silk buying early in the year was

met in part by the great increase in nylon production. Increased diversion to defense needs in most articles of clothing resulted in a decrease in supplies available for civilian use. See **GARMENT INDUSTRY**; **SHOE INDUSTRY**; **TEXTILES**.

Housefurnishings which ordinarily take about 4 per cent of the average family's expenditures were 16.3 per cent higher on Dec. 15, 1941, than on Dec. 15, 1940. Increases in prices of wool rugs and wool blankets which began in the fall of 1940 continued with the decline in imports of wool (q.v.) and army purchases of wool blankets. Large increases in costs were also reported for furniture, electrical equipment, sheets, and mattresses. Excise taxes on electrical equipment added to the increased cost of housefurnishings. The goods in this category are manufactured largely from raw materials needed in equipping the army.

Rents moved steadily upward throughout 1941 with the lower income groups bearing the largest per cent increases. In the larger cities of the country, the increase in the total rent bill of moderate-income families amounted to 3 per cent. In many defense cities the migration of workers caused acute housing shortages and average rents rose more than 10 per cent over the year in such cities as Birmingham, Mobile, Norfolk, and Seattle. The construction of new dwellings for defense workers has relieved the situation somewhat in a number of cities where housing previously built was inadequate to care for the influx of defense workers.

Fuel prices did not show the usual seasonal decline during the middle of 1941 but increased slightly from month to month. At the end of 1941 prices of fuel were 3.4 per cent higher than the year before. Coal prices rose by 7.9 per cent and prices of gasoline, 11.2 per cent. See **COAL**; **PETROLEUM**, ETC.

The cost of miscellaneous goods and services ordinarily is more stable than that of any other group of family purchases. During 1941, however, these costs increased 5.8 per cent, with increased prices for drugs, tires, automobiles, and soaps being largely responsible for the rise. Defense excise taxes effective Oct. 1, 1941, also caused a slight increase in this group.

See **PRICE ADMINISTRATION, OFFICE OF**; **BOLIVIA**, **CANADA**, **CHILE**, **CUBA**, **DENMARK**, **EGYPT**, **FINLAND**, **FRANCE**, **GERMANY**, **GREAT BRITAIN**, **GREECE**, **ITALY**, **JAPAN**, **NEWFOUNDLAND**, **NEW ZEALAND**, **SPAIN**, **SWEDEN**, **SWITZERLAND**, **VENEZUELA**, under *History*.

FAITH M. WILLIAMS.

LOANS, Commercial. See **BANKS AND BANKING**.

LOCAL DRAFT BOARDS. See **SELECTIVE SERVICE SYSTEM** under *State Headquarters*.

LOMBOK. See **NETHERLANDS INDIES** under *Area and Population*.

LONDON. See **GREAT BRITAIN** under *Area and Population, History*.

LOS ANGELES. See **ARCHITECTURE** under *Department Housing*; **FLOOD CONTROL**; **WATERWORKS AND WATER PURIFICATION**.

LOUISIANA. A west south central State. Area: 48,523 sq. mi., including 3,346 sq. mi. of inland water, but excluding Gulf of Mexico coastal waters, 1,016 sq. mi. Population: (1940 census) 2,363,880. The urban population comprises 41.5 per cent of the total (U.S. average, 56.5 per cent); non-white population, 36.0 per cent (U.S. average, 10.2); elderly (65 years and over), 4.9 per cent. Louisiana ranks 30th among the States in area, 21st in population, and 24th in density, with an average of 52.3 per-

sons per square mile. The capital is Baton Rouge with 34,719 inhabitants; largest city, New Orleans, 494,537. There are 64 counties and 10 cities of more than 10,000 inhabitants (see article on **POPULATION** in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see **VITAL STATISTICS**.

Education. According to the latest Biennial Survey of Education, there were 460,946 pupils enrolled in the State School System during the school year 1937-38. Of this total, 374,203 were enrolled in kindergartens and elementary schools and 86,743 in secondary schools; 166,754 were in separate Negro schools. (In 1939-40, 298,455 white pupils were enrolled.) The instructional staff comprised 14,115 persons, who received an annual average salary of \$982 (U.S. average: \$1,374); 2,588 or 18.5 per cent were men. Expenditures for all public schools in 1937-38 were \$26,506,797, making a total cost per capita of \$12.36 (U.S. average: \$17.15). There were 3,521 school buildings in the State, of which 972 were one-room, one-teacher schools. The value of public property used for school purposes was \$57,198,447. For higher education, see under *Louisiana* in the table of **UNIVERSITIES AND COLLEGES**.

Transportation. State highway mileage in 1939, including streets under State control, totaled 18,222, of which 14,712 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 372,830, 280,663 were private and commercial automobiles, 2,973 busses, and 81,793 trucks and tractor trucks. Gross motor-fuel consumption was 278,083,000 gal. Net motor-fuel tax receipts were \$18,671,000, the rate being seven cents per gal. (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$5,392,000.

Railways of all classes extended 4,422 miles (Dec. 31, 1939) 1.88 per cent of the total mileage in the United States. Class I steam railways (3,318 miles) reported 15,041,697 tons of revenue freight originating in Louisiana in 1940 and 15,601,985 tons terminating in Louisiana. There are 26 airports and landing fields in the State (13 lighted fields) and 11 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 253 civil aircraft in the State and 1,239 airline transport, commercial, and private pilots (1,073 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 4,164,000, as compared with 4,253,000 acres in 1940. According to the latest census, there are 150,007 farms, valued at \$353,873,506, averaging 66.6 acres each. Farm population numbered 857,475 or 36.3 per cent of the total. Leading crops with production were: Cotton lint, \$26,302,000, 315,000 bales; rice, \$24,882,000, 19,906,000 bu.; corn, \$16,585,000, 22,260,000 bu.; sugar cane, \$14,599,000, 3,978,000 short tons; cottonseed, \$6,698,000, 141,000 tons.

Manufacturing. According to the 1939 Census of Manufactures, there were 1,861 manufacturing establishments in Louisiana, employing 71,218 wage earners who received \$55,083,540 in wages during the year. The total value of products was \$565,265,273 and the value added by manufacture was \$200,085,837.

Mineral Production. Leading mineral products are: Petroleum, of which 103,961,000 bbl. were produced in 1940 (93,646,000 bbl. valued at \$98,000,000 in 1939); natural gas, 294,370,000 M cu. ft. valued at \$53,835,000 in 1939. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$168,902,949 or 3.99 per cent of the United States total. Louisiana ranks seventh

among the States in value of mineral production. See ZINC.

Trade. According to the 1940 census there were 2,391 wholesale establishments in Louisiana, employing 23,777 persons, reporting net sales for 1939 of \$706,402,000 and annual pay roll of \$32,822,000. There were 25,469 retail stores with 63,638 employees, reporting sales of \$486,250,000 and pay roll of \$49,000,000. Service establishments numbered 6,887, employing 18,552 persons for \$12,786,000 per year, and reporting a business volume amounting to \$36,402,000. The leading business center of the State is New Orleans which reported wholesale sales of \$437,639,000, retail sales of \$157,062,000. Orleans Parish, which is coextensive with the city of New Orleans, is the leading parish in the State in receipts for its service establishments (\$19,223,000).

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Louisiana was \$35,281,000. Under the Social Security program, financed by Federal funds matching State grants, 36,099 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$13.37 (U.S. average pension, \$21.08); 39,658 dependent children in 15,812 families received average monthly payments of \$27.13 per family (U.S. average, \$32.73), and 1,260 blind persons received \$17.22 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 12,244 and received \$15.89 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses). CCC, 5,795 (\$384,000); NYA student work program, 6,162 (\$43,000); NYA out-of-school work program, 10,207 (\$181,000); WPA, 28,736 (\$1,493,000), regular Federal construction projects, 21,355 (\$3,389,000) The Farm Security Administration certified subsistence payments totaling \$25,000 for the month to 1,106 cases.

Legislature. The Legislature convenes in regular session on the second Monday of May in even years (There was no session in 1941) It is composed of 39 Senators and 100 Representatives, all of whom are Democrats. The President of the Senate is Marc M. Mouton; President Pro Tem, Frank B. Ellis, Speaker of the House, R. Norman Bauer.

Finances. Total tax collections in Louisiana for the fiscal year ending in June, 1940, were \$81,420,000 (partial report for 1941: \$67,303,000). Total sales taxes in 1941 amounted to \$37,459,000, including motor fuel, \$21,223,000. Taxes on specific businesses (1940) ran to \$7,014,000, general and selective property, \$7,723,000, unemployment compensation (1941), \$7,918,000. The net income taxes (1941) were \$5,996,000. Cost payments for the operation of general government totaled \$67,184,000 in 1939, the latest year available. (Revenues for the general government for that year were \$96,830,000.) Cost of operation per capita was \$28.67. Total gross debt outstanding in 1941 was \$185,464,000, as compared with \$83,884,000 in 1932.

Officers and Judiciary. The Governor is Sam Houston Jones (Dem.), inaugurated in December, 1939, for a four-year term; Lieutenant Governor, Marc M. Mouton; Secretary of State, James A. Gremillion; Attorney General, Eugene Stanley; State Treasurer, A. P. Tugwell, State Auditor, L. B. Baynard. Chief Justice of the Louisiana Supreme Court is Charles A. O'Niell; there are six associate members elected by popular vote for 14-year terms. See PRISONS.

LOYALTY ISLANDS. See NEW CALEDONIA.

LÜBECK. See GERMANY under *Area and Population*.

LUMBER. Lumber in 1941, according to year-end estimates, was expected to approximate thirty-two billion board feet. Softwood lumber production was under heavy demand during the year, but demonstrated (especially in the latter months) sufficient flexibility to adapt itself to the demand. The hardwood industry was not able to reach a satisfactorily level balance between production and demand. Although output of hardwood in the last three months overcame demand, stocks continued their downward plunge begun in May, 1940, and dry wood was difficult to obtain.

PRODUCTION BY QUARTERS OF HARD AND SOFT LUMBER, 1941 (ESTIMATED)

	First quarter	Second quarter	Third quarter	Stocks October 31
Southern Pine ..	2,173,000	2,182,000	2,190,000	1,350,000
West Coast ..	2,095,000	2,101,000	2,237,958	
Western Pine	870,000	1,652,000	1,823,000	1,740,000
Calif Redwood	112,000	129,000	150,800	254,000
Southern Cypress ..	49,000	41,000	40,533	203,000
Northern Pine ..	32,000	13,000	21,376	
Northern Hemlock ..	110,000	93,000	95,326	
Appalachian	29,000	28,000	30,656	40,000
Other Softwoods ...	385,000	394,000		1,134,000
Total Softwoods	5,858,000	6,635,000	7,213,649	4,721,000
Southern Hardwoods	483,000	549,000	635,000	650,000
Appalachian Hard- wood	180,000	211,000	194,222	250,000
Northern Hardwoods	173,000	171,000	111,583	130,000
Other Hardwoods				110,000
Total Hardwoods	1,011,000	1,122,000	1,131,859	1,140,000
Total Lumber	6,869,000	7,757,000	8,345,508	5,861,000

^a Based on figures released by the National Lumber Manufacturers Association.

^b Derived from figures in the Industrial Reference Service, U S Department of Commerce

Army purchases of softwood totaled over 250 million feet in September, 1940, the highest volume since the army construction program was initiated, and totaled over 1,626 million feet from September, 1940, to September, 1941. Purchases of hardwood for lend-lease use totaled over six million feet, with continued buying anticipated.

Lumber Trade. Figures from the *Monthly Summary of Foreign Commerce* (September, 1941) showed a distinct decline in exports, due, of course, to the war. Imports, on the whole, showed relatively little change. The total values for the nine months ended September, 1941, were as follows: Imports, \$211,555,726; exports, \$104,694,320. A breakdown of this shows the following:

Wood product	Imports	Exports
Wood, Unmanufactured	\$ 8,100,194	\$ 1,806,118
Wood, Sawmill Products	32,449,124	21,650,242
Wood, Manufactures	10,059,585	15,084,684
Paper Base Stocks	60,562,721	17,181,429
Paper and Manufactures	100,384,103	48,971,847

LUTHERAN CHURCH. The year 1941 was filled with activities that sprang directly from the exigencies of the world emergency. As in 1940, Lutherans of America bore the responsibility of maintaining all orphaned Lutheran mission fields and for this purpose raised \$400,000 in the first 11 months of 1941. For the missions of the Church of Norway came the grant of £50,000 from the Norwegian Government-in-Exile, to be administered by J. A. Aasgaard, president of the Norwegian Lutheran Church of America. Mission board problems included the withdrawal of all missionaries from Japan and of wives and children from China, and the difficulties of securing passage for missionaries going out from America.

The Lutheran Refugee Service served about 250

newcomers in 1941, making a total of 1,361 persons with whom it has had contact since June, 1939. Placements have been arranged for about 900 of these. The Service is trying more than ever to fit the refugee into the American and the church community.

The most important 1941 project attendant to the national emergency was the inauguration of a ministry to spiritual and religious needs of Lutheran men in the United States Armed Forces. The Service Men's Division of the National Lutheran Council and the Army and Navy Commission of the Missouri Synod are the two agencies heading this work. Starting in January, by December they had set up 27 centers in camp communities, each with a full-time service pastor. They also render service to the 185 Lutheran chaplains in the Army and Navy.

Again the National Lutheran Council sponsored WRUL broadcasts directed to Lutherans in Europe. The "Lutheran Hour," originating from station KFVO, St. Louis, is rapidly becoming a world-wide program, because in 1941 it was carried in English by 15 foreign stations and in Spanish by 70. For the first time a Yiddish New Testament has been translated and published in America. This 1941 accomplishment was the climax of many years of work by Dr. Henry Einspruch, head of the Lutheran Jewish Mission in Baltimore. Full-time pastors for Lutheran students were installed at the Universities of Minnesota and Wisconsin. In the United Lutheran Church 6 colleges and 4 theological seminaries realized more than \$1,000,000 in special fund-raising campaigns.

Large 1942 conventions for young people were those of the Luther League in Kitchener, Ontario, and the Walther League in New Orleans. Some of the smaller Lutheran bodies held annual meetings, and the Evangelical Lutheran Synod of Missouri, Ohio, and Other States (the "Missouri" Synod) had 1,000 persons attending its triennial convention in Ft. Wayne, Ind. A feature of this meeting was the commemoration of F. C. D. Wymken's great ministry of a century ago in the Mississippi Valley.

The year 1942 is the 200th anniversary of Henry Melchior Muhlenberg's arrival in America. As he is considered the father of the Lutheran Church in America, extensive plans have already been laid for recognizing this event; participation of the U.S. Government in the celebration has been assured by congressional resolution.

The various Lutheran church bodies drew closer together in work and study in 1941, though not by formal doctrinal declarations. Out of a notable all-Lutheran conference in Columbus, Ohio, in January, came the cooperation of almost all American bodies in the support of orphaned missions and in the service to men in the Armed Forces. Encouraging intersynodical conferences and six noteworthy seminars brought Lutheran laymen and pastors together with excellent results.

The latest available figures show that Lutherans in the United States and Canada have 4,990,893 baptized and 3,514,799 confirmed members in 15,796 organized congregations. The total of ordained ministers is 13,038. In 1940 these Lutherans raised \$43,092,392 for local congregational expenses and \$10,072,822 for work at large.

LUXEMBURG. A grand duchy of Western Europe, occupied by German troops on May 10, 1940. Bounded by Germany, France, and Belgium, Luxembourg has an area of 999 square miles and a population estimated at 301,000 on Dec. 31, 1938. Most of the

inhabitants profess the Roman Catholic faith. They speak a Germanic dialect, with French as their secondary language. Chief towns; Luxembourg (capital), 57,740 inhabitants; Esch-Alzette, chief mining center, 27,517; Differdange, 15,945; Dudelange, 13,572. There is no illiteracy.

Production, Trade, etc. Agriculture normally supports some 32 per cent of the population. Yields of the chief crops in 1939 were (in metric tons): Wheat, 27,000; barley, 3,400; rye, 12,400; oats, 45,000; potatoes, 285,600 (1938). Mining and metallurgical industries are important, production figures for 1939 (in metric tons) being: Pig iron and ferroalloys, 1,776,000; steel ingots and castings, 1,824,000; iron ore, 5,140,632 (1938). A Belgo-Luxembourg customs union, established May 1, 1922, ended Aug. 15, 1940, when Luxembourg was incorporated in the German customs area. In 1940 there were 2,558 miles of highway and 318 miles of railway line open to traffic.

Government. Budget revenue for 1940 was estimated at 352,600,000 francs; expenditure, 369,000,000 francs; public debt on Dec. 31, 1939, 134,100,000 francs (Luxembourg franc equalled 1.25 Belgian francs before May 10, 1940; it was pegged to the reichsmark at 1 franc=RM 0.10 on Aug. 26, 1940, and ceased to be legal tender on Mar. 1, 1941).

Previous to the German invasion, executive power and the right to organize the government rested with the Grand Duchess Charlotte, who succeeded to the throne on Jan. 9, 1919. Legislative power was vested jointly in the Grand Duchess and the Chamber of Deputies (lower chamber) of 55 members (comprising in 1940, 25 Catholic-Conservatives, 18 Socialists, 6 Radical-Liberals, and 6 others), elected for a term of six years by universal suffrage. The Council of State (upper house) of 15 members was appointed for life by the sovereign.

Upon the German invasion, Grand Duchess Charlotte and four of the five Cabinet Ministers escaped to France. When France collapsed the Grand Duchess and two members of her Cabinet established themselves in November, 1940, in Montreal, Canada. Members of the Cabinet in 1941 were hold-overs from the Catholic, Socialist, and Radical-Liberal coalition government formed Nov. 5, 1937. They included: Minister of State, President of Government and Minister of Treasury, Pierre Dupong (in Montreal); Foreign Affairs, Joseph Bech (in London); Social Welfare and Labor, P. Krier (in London); Justice and Public Works, Victor Bodson (in Montreal); Education, Agriculture, and Commerce and Industry, N. Margue (prisoner of war in Germany).

Reichsfuehrer Hitler appointed Dr. Gustav Simon as Chief of Civil Administration in Luxembourg on July 25, 1940, and he undertook the progressive incorporation and assimilation of the grand duchy in the Reich (see YEAR BOOK for 1940, p. 424).

History. The reorganization of Luxembourg as an integral part of the Reich was carried rapidly forward during 1941. The grand duchy was included in the German province of Coblenz-Trier when that province was renamed Moselland by a decree of Feb. 8, 1941. It was announced in Berlin February 16 that all citizens and "stateless persons" residing in Luxembourg must Germanize their first names. The decree covering this action required that where last names were French or other foreign versions of original German names, the German names must be restored.

Extreme pressure was placed upon Luxembourg parents to force their children to join the Hitler Youth Organizations. Many hundreds of workmen

and other people, their employment application papers having been falsified by the German authorities, were reportedly subjected to forced deportation and sent to work in Cologne and Trier. Members of the Luxemburg bar who refused to join the local Nazi organization were disbarred from practicing their profession, indiscriminately sentenced to perpetual hard labor, and deported to Germany to work on the roads (see *The Inter-Allied Review*, New York, Aug. 15, 1941, p. 8). On July 5, 1941, information was received by the provisional Luxemburg Government in Montreal that Luxemburg was being stripped by the Nazis of all its leaders, leaving the country "virtually without a head." Among the leaders imprisoned or taken away to Germany was the former mayor of the city of Luxemburg who was said to be working with a road gang in Germany. Church leaders were prominent among the persecuted, because of their opposition to the invaders. Many priests, monks, and nuns were jailed or deported.

The Luxemburg Government-in-Exile continued its struggle to restore the grand duchy's independence. Premier Dupong represented Luxemburg at the gathering of representatives of the 14 Allied powers in London on June 12, where all gave formal pledges to "continue the struggle against German or Italian aggression until victory has been won." Grand Duchess Charlotte, her consort, Prince Felix, and their son, Grand Duke Jean, were guests of President and Mrs. Roosevelt at the White House in Washington on February 12-13. On February 23 they were feted by the Luxemburg societies of New York during a visit to that city. Several hundred Luxemburgers reached British shores and were serving with the British, Free French, and Belgian forces.

See GREAT BRITAIN under *History*.

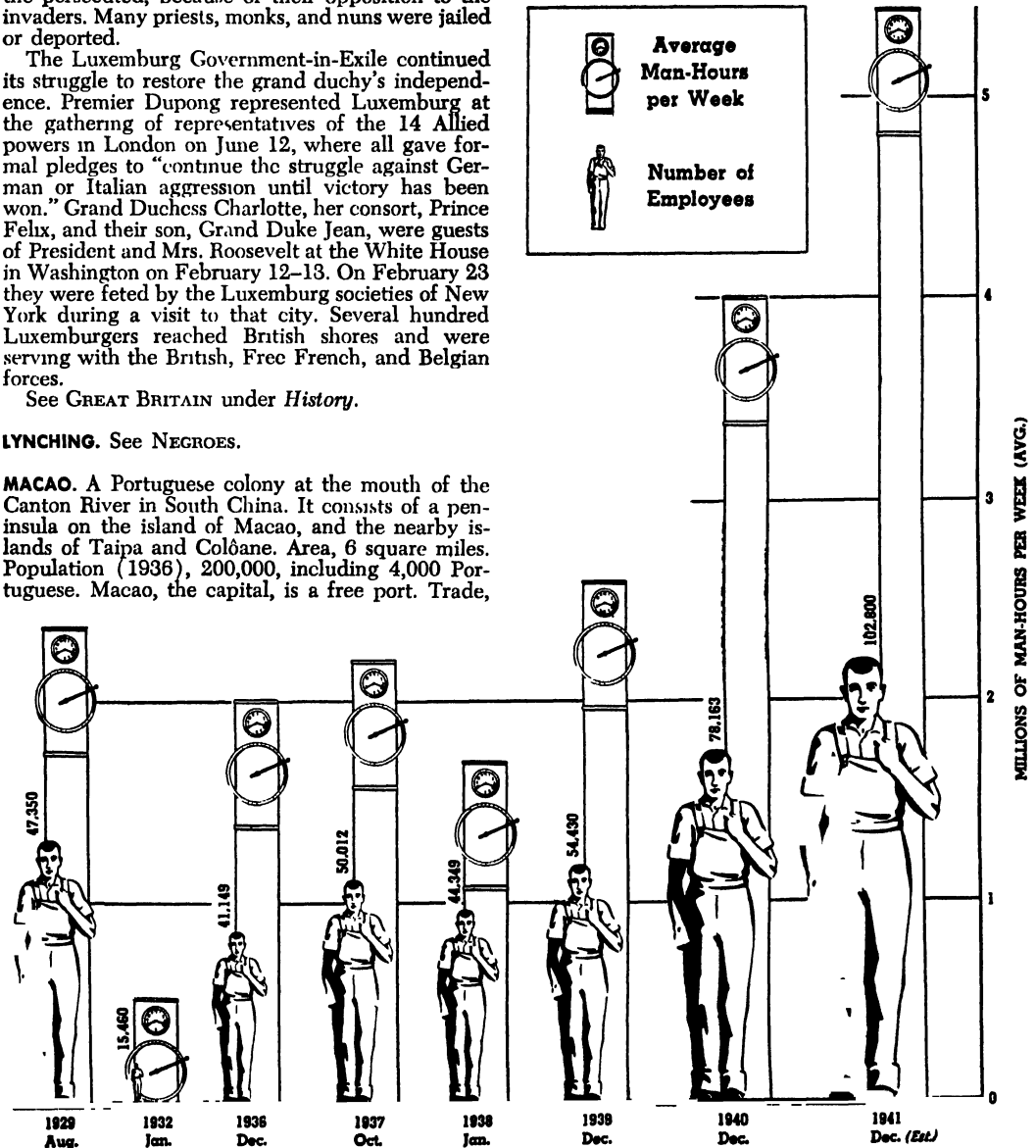
LYNCHING. See NEGROES.

MACAO. A Portuguese colony at the mouth of the Canton River in South China. It consists of a peninsula on the island of Macao, and the nearby islands of Taipa and Colôane. Area, 6 square miles. Population (1936), 200,000, including 4,000 Portuguese. Macao, the capital, is a free port. Trade,

mainly transit, is in the hands of the Chinese. Budget (1939): 44,937,126 escudos (escudo averaged \$0.0404 for 1939). Shipping (1937): 2,298,285 tons entered and cleared.

MACEDONIA. See BULGARIA, GREECE, and YUGOSLAVIA, under *History*.

MACHINE BUILDING. Development along machine building and other engineering lines has been largely affected by the war, as was to be expected. Aside from direct war orders for airplanes, ammunition, machine guns, tanks, and field guns, the effect on builders of machine tools and similar products has been marked. The volume of machine tool business dropped from 185 millions in 1929 to 22 million in 1932. It crawled back to 195 million in 1937, dropped to 145 million in 1938 and



Courtesy of American Machinist

EMPLOYMENT IN MACHINE TOOL PLANTS

in 1941 will reach an estimated all time high of 800 million.

Put in another way, it is estimated that in January, 1940, we had a total of about 930,000 machine tools of all kinds in this country. Normal production of machine tools averages about 25,000 units, a year, large and small. But during 1940 we produced over 100,000 machine tools, four times the usual number, and the 1941 output, it is estimated, will reach a total of 200,000 new machines.

Mere numbers however, do not begin to tell the whole story. Many improvements have been made which greatly increase the capacity of the machines. Cutting tools are now more efficient. This coupled with increased power, makes it possible to produce much more work than ever before. These changes have made these new machines at least three times as productive as the average machine in use at the beginning of 1940. On this basis we can assume that the machine tools built during 1940 and 1941 alone have a production capacity practically equal to all the 930,000 machine tools in the shops of the country at the end of 1939.

This increased productivity is being reflected in the greatly increased number of airplane engines, of rifles, machine guns, tanks, and other equipment, much of which goes overseas. It also helps greatly in increasing the number of machine tools that can be built in the various shops. Add to this the greatly increased man-hours now being expended in the machine tool shops and the greatly increased production becomes more understandable. For the man hours per week in the machine tool shops have increased from 4 million in 1940 to 5½ million in 1941.

Sub-contracting has become a much greater factor in the production of machinery of all kinds than ever before in our history. It is being extended to all kinds of machine work. It differs from the established practice of the automobile builders in many ways. In that industry it has been common to purchase complete units, such as transmissions and axles from those who specialized in those parts.

In order to speed production we have copied to some extent what the British have called "bits and pieces," which means that a mechanism is dissected, so to speak, and its units are farmed out to small shops which have no facilities for making complete units but which can make some of the parts. This has been extended to the building of machine tools as well as to other products.

This farming out of parts is likely to have its effect on industry after the war, and in several ways. Small shops are getting experience in work that is new to them, which should help to widen their activities in several ways. Large shops which have made all their own parts may find it advantageous to confine themselves to the major parts of their machines and to continue some of the outside sources they have acquired. This may at times be cheaper than maintaining small, special departments which may represent considerable investment but which are normally idle part of the time.

Shortage of some alloys has led to substitutions in steels which may have a lasting effect. Some of the changes are claimed to be an advantage in several ways. Plastics are taking the place of steel in more parts of the automobile. They are also being tried in the construction of some training planes to lessen the time required to build them.

Among the new devices which have been brought out to facilitate manufacture of airplanes, nothing is more striking than the explosive rivet, designed for use in blind riveting jobs. This rivet requires no backing up or hold-on. Each rivet contains a

small amount of explosive in the small end. It is inserted in its hole, with the sheets clamped together by suitable means, and heat applied to the head of the rivet. This explodes the charge and mushrooms the inside end into a head that holds the sheets together perfectly.

New processes are being applied to the making of guns and other munitions. Bores of barrels of larger guns are being honed to secure greater smoothness than was possible with the former practice of boring. It also saves time. One of these honing machines can now finish the bore of guns up to 70 feet long. Smaller bores are also being honed satisfactorily.

Rifling grooves are now being cut with broaches instead of the older rifling method. This cuts all the grooves at once and saves considerable time. New methods of measuring both the bores and the depth of the rifling grooves have also been developed which secure greater accuracy in much less time. This is accomplished by what is known as the "air-gage" method.

See PRODUCTION MANAGEMENT, OFFICE OF; also, ELECTRICAL INDUSTRIES, ELECTRIC LIGHT AND POWER, MOTOR VEHICLES, ETC.

FRED H. COLVIN

MACKENZIE, District of. See NORTHWEST TERRITORIES

MADAGASCAR. A French island colony near the southeast coast of Africa. Area, 241,094 square miles. Population, including that of the Comoro Islands (1936 census), 3,797,936 (3,758,338 Malagasy, 25,255 French, and 14,343 foreigners. Chief towns (1936 census): Tananarive (Antananarivo), 126,515; Majunga, 23,684; Tamatave, 21,421; Antsirabe, 18,215; Tulear, 15,180; Fianarantsoa, 14,740. Education (1939): 1,717 schools and 221,179 students.

Production and Trade. Maize, rice, coffee, sugar, copra, potatoes, manioc, groundnuts, vanilla, cacao, graphite, mica, phosphates, gold, precious stones, and hides are the important products. On Jan. 1, 1937, there were 6 million cattle on the island. Many valuable timbers are produced from the forests. Silk and cotton weaving, metal working, and the making of straw hats are carried on. Trade (1938): 602,710,000 francs for imports and 819,397,000 francs for exports (franc averaged \$0.0288 for 1938; \$0.0251, 1939). Shipping (1938): 7,364 vessels of 4,306,309 aggregate tons entered the ports.

Government. Budget (1939): 343,660,000 francs. Public debt (Dec. 31, 1938), 823,866,684 francs. The government is headed by a governor general, assisted by a consultative council. Gov. Gen., M. Annet (appointed Dec. 13, 1940).

Comoro Islands. A region or province under the general government of Madagascar, consisting of the archipelago formed by the islands of Mayotte, Anjouan, Grande Comore, and Mohéli. Area, 790 square miles; population (1936), 128,608. Capital, Zandzi.

History. A German military mission was reported to be in Madagascar during 1941.

MADEIRA. An administrative district of Portugal, consisting of a group of islands (Madeira, Porto Santo, and three uninhabited isles) in the Atlantic about 600 miles southwest of Lisbon. Area, 314 square miles; population, about 217,000, of whom 70,000 reside in Funchal, the capital, on the island of Madeira. Normally Funchal is an important port of call for shipping lines and pleasure cruises, but as a result of the war the number of vessels enter-



MACHINE BUILDING

(1) The multiple drill, which combines a score of operations into one, is typical of the steps by which this plant will achieve 100 per cent conversion to defense production in exactly one year

(Photo courtesy of the manufacturer)

(2) A block which slides in a sine bar gives a rotary motion to gun rifling bar as the carriage travels back and forth

(Courtesy American Machinist)

(3) Barrels are drilled in a center drive lathe of modern design which permits working simultaneously from both ends

(Courtesy American Machinist)

(4) This giant spot-welding apparatus, which "stitches" steel parts with electric power, handles 400 freight cars a month

(Westinghouse Photo)



Press Association



International News Photo

BOLSTERING SINGAPORE'S DEFENSES

Above: Australians landing from a large troopship convoy. Below: Gen. Sir Archibald Wavell (left), commander of the Allied forces in the Far East, on an inspection tour of the island fortress with Maj. Gen. Sir Keith Simmons. See **BRITISH MALAYA; WORLD WAR.**

ing the port declined from 1,316 in 1938 to 381 in 1940. The tourist trade practically disappeared. The other chief occupations are embroidery (by hand) and wine making. The 1940 exports of these products were less than one-fourth those of 1939. Sugar, bananas and other fruits are grown. See PORTUGAL.

MADOERA. See NETHERLANDS INDIES under *Area and Population*.

MAGAZINES. See NEWSPAPERS AND MAGAZINES.

MAGNESIUM. Magnesium is no longer classed among the minor metals. In March, 1941, it was put on the mandatory priority list, the second metal (aluminum was first) to be so listed, and this in spite of the all time high of 6,250 tons produced in 1940. In November it was put on a monthly allocation basis.

Magnesium and aluminum are the cardinal metals of airplane construction. The two alloyed together make a light tough metal which is considered responsible for the wonderful performance of American airplanes everywhere. A half ton of magnesium goes into the making of one fighter plane; a bomber takes more. One hundred eighty pounds of magnesium in an airplane engine replaces 270 lb. of aluminum. In a big bomber it makes possible a 360-lb. load of extra bombs. The munitions industry also makes extraordinary demands on the magnesium supply for its increased and increasing needs for pyrotechnic materials. Magnesium is needed by the millions of pounds in the manufacture of ammunition, flares, star shells, incendiary bombs, and also for naval, artillery, and anti-aircraft tracer shells.

Production of magnesium in 1941 was 30,000 tons. Of this amount 15,600 tons went into airplane construction, 1,500 tons into the manufacture of pyrotechnics and chemicals, about 19,500 tons to the manufacture of fabricated products, 9,000 tons to aluminum, copper, and zinc alloys.

The United States has access to plentiful ores, especially since magnesium is the third most frequent element in the earth. The war problem was to increase the manufacture. On Jan. 21, 1941, the Dow Chemical Co. plant at Freeport, Texas, made its first solid bar of magnesium out of sea water. The Dow Chemical Co. at Midland, Michigan was the only magnesium producer until 1940; but the expansion of its two plants and the advent of several newcomers in the field will bring U.S. production up to some 200,000 tons a year by the end of 1942. Consumption is expected to reach or exceed that figure at about the same time. According to the U.S. Bureau of Mines this amount will be taken from five principal sources: underground brines (the only source, 1927-41), sea water, magnesite, dolomite, Langbeinite. Forty per cent of the nation's magnesium will be produced from magnesite in 1942, 27 per cent from sea water, 23 per cent from dolomite, 10 per cent from brine and potash salt.

No magnesium was imported in 1940; exports fell 59 per cent. In March, 1941, 200 short tons were made available for export to Great Britain by the Priorities Division of the OPM. The price was 27¢ a lb. throughout 1941.

See BOMBS; CHEMISTRY, INDUSTRIAL under *Metals*; MINES, BUREAU OF.

MAHE. See FRENCH INDIA.

MAILS. See CENSORSHIP, OFFICE OF; POST OFFICE. For the Airgraph System of transporting mail, see PHOTOGRAPHY under *Military*.

MAINE. A New England State. Area: 33,215 sq. mi., including 2,175 sq. mi. of inland water, but excluding Atlantic coastal waters, 1,102 sq. mi. Population: (1940 census) 847,226. The urban population comprises 40.5 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 0.3 per cent (U.S. average, 10.2); elderly (65 years and over), 9.4 per cent. Maine ranks 38th among the States in area, 35th in population, and 33rd in density, with an average of 27.3 persons per square mile. The capital is Augusta with 19,360 inhabitants; largest city, Portland, 73,643. There are 16 counties and 10 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Harry V. Gilson, Commissioner of Education, there were 171,434 pupils enrolled in the public schools of Maine during the school year 1939-40, 133,718 in elementary schools and 37,716 in secondary schools. Teachers numbered 5,978 and received an annual average salary of \$823 in elementary schools and \$1,377 in secondary schools. Total expenditures for the year were \$11,254,441.

Transportation. State highway mileage in 1939, including streets under State control, totaled 8,771, of which 8,625 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 208,595; 161,792 were private and commercial automobiles, 190 busses, and 43,914 trucks and tractor trucks. Gross motor-fuel consumption was 157,361,000 gallons. Net motor-fuel tax receipts were \$5,940,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$4,162,000.

Railways of all classes extended 1,881 miles (Dec. 31, 1939) .80 per cent of the total mileage in the United States. Class I steam railways accounted for 1,503 miles. There are 16 airports and landing fields in the State (five lighted fields) and 23 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 176 civil aircraft in the State and 451 airline transport, commercial, and private pilots (360 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 1,164,000, as compared with 1,172,000 acres in 1940. According to the latest census, there are 38,980 farms, valued at \$124,082,841, averaging 108.3 acres each. Farm population numbered 177,106 or 20.9 per cent of the total. Leading crops with production in 1941 were: Potatoes, \$32,664,000, 44,745,000 bu.; hay, \$9,067,000, 650,000 tons.

Manufacturing. According to the 1939 Census of Manufactures, there were 1,210 manufacturing establishments in Maine, employing 75,655 wage earners who received \$68,434,288 in wages for the year. The total value of products was \$345,368,595; value added by manufacture, \$152,423,414.

Mineral Production. Minerals are of relatively little importance in the output of Maine, their total value in 1939 being only \$3,769,671, according to the U.S. Bureau of Mines; about one-third of this sum was accounted for by stone.

Trade. According to the 1940 census there were 1,032 wholesale establishments in Maine, employing 7,286 persons, reporting net sales for 1939 of \$165,848,000 and annual pay roll of \$10,135,000. There were 13,455 retail stores with 28,113 employees, reporting sales of \$281,356,000 and pay roll of \$26,079,000. Service establishments numbered 4,303, employing 4,642 persons for \$3,814,-

000 per year, and reporting a business volume amounting to \$14,701,000. The leading business center of the State is Portland which reported wholesale sales of \$61,479,000, retail sales of \$45,895,000, and \$3,648,000 receipts for its service establishments. Bangor reported sales of \$20,022,000 wholesale and \$20,312,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Maine was \$14,457,000. Under the Social Security program, financed by Federal funds matching State grants, 12,502 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$20.84 (U.S. average pension, \$21.08); 3,864 dependent children in 1,545 families received average monthly payments of \$39.60 per family (U.S. average, \$32.73); and 1,071 blind persons received \$22.72 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 6,898 and received \$21.33 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 849 (\$56,000); NYA student work program, 2,355 (\$20,000); NYA out-of-school work program, 3,228 (\$94,000); WPA, 4,602 (\$321,000); other Federal emergency projects, 13 (\$2,000); regular Federal construction projects, 8,218 (\$978,000). The Farm Security Administration certified subsistence payments totaling \$6,000 for the month to 204 cases.

Legislation. The Legislature convenes in regular session on the first Wednesday of January in odd years. It is composed of 33 Senators (2 Democrats, 30 Republicans, and 1 vacancy in 1941) and 151 Representatives (22 Democrats, 127 Republicans, and 2 vacancies).

Among the more important bills passed during the 90th session was an Act relating to the conservation of soil and soil resources and the prevention and control of soil erosion. Under the Act, a State soil conservation committee was established, consisting of the directors of the State agricultural extension service and experiment station and three farmers appointed by the Governor. Creation of soil conservation districts was provided for upon petition of any 25 occupiers of land and pending a referendum of all land occupiers in the proposed district.

A Maine State Guard was established, to be maintained whenever the National Guard of the State is in active Federal service. There were established also the Maine Mining Bureau, in an Act regulating prospecting and establishment of mining claims, and a Sanitary Water Board to control, prevent, and abate pollution of certain waters in the State. (The latter board resulted from the pollution of the Androscoggin River.)

The Model Airport Zoning Act permitted political subdivisions to make zoning regulations in the areas around airports, specifying the land uses permitted and restricting the height of structures and trees. Under other Acts, municipal airports were declared to be agencies of the State, and the aviation laws of the State were consolidated.

A Use Fuel Tax Act levied a four cents per gallon tax on users of fuel in internal combustion engines propelling motor vehicles; proceeds of the tax were to be used for highways only. The Gasoline Tax Act, as amended, required distributors of internal combustion engine fuel to make reports on or before the last day of each month, at which time they should pay four cents upon each gallon reported as sold, distributed, or used. Also affecting high-

ways was an Act designed to remove the menace of junkyards, a city or county permit was required for the establishment of a junkyard (three or more cars) and they could not be established within 500 feet of highways unless screened from view or adequately fenced.

Another important tax law created a tax of one mill for each cigarette sold. Dealers and distributors were required to secure annual licenses at the rate of \$25 per year for each wholesale outlet and \$1 per year for retail outlets including vending machines. This tax was designed to finance the program of aid to aged and dependent persons. (See above under *Social Security and Relief.*)

Premarital medical examinations were required within 30 days prior to the date on which a marriage license was applied for, the examination to include a test for syphilis; free blood tests were provided for those unable to pay. Representatives to Congress were reapportioned in three districts, elections to Congress to be held on the second Monday of September, 1942, and thereafter biennially. The Inheritance Tax Law and the Financial Responsibility Law (relating to motor-vehicle accidents resulting in death) were amended, and the laws pertaining to narcotic drugs and declaratory judgements and decrees were made uniform. The incorporation of credit unions and the organization of Rural Electrification Cooperatives were authorized, the latter requiring the participation of five or more persons or two or more other cooperatives.

A referendum measure submitted to the voters of Maine on December 10 would have increased the tax on gasoline from 4 to 4½ cents per gallon and would have increased from 3 to 3½ cents the rebate per gallon on gasoline used otherwise than in motor vehicles operated on public highways. The measure was overwhelmingly defeated, preliminary returns of the Associated Press showing 20,361 votes against to 4,823 for the increase.

Finances. Total tax collections in Maine for the fiscal year ending in June, 1940, were \$24,646,000. Total sales taxes amounted to \$7,399,000, including motor fuel, \$6,133,000. Taxes on specific businesses ran to \$2,897,000, general and selective property, \$5,044,000, unemployment compensation (1941), \$4,216,000. Cost payments for the operation of general government totaled \$26,950,000 in 1939, the latest year available. (Revenues for the general government for that year were \$33,919,000.) Cost of operation per capita was \$32.08. Total gross debt outstanding in 1941 was \$22,011,000, as compared with \$27,462,000 in 1932.

Officers and Judiciary. The Governor is Sumner Sewall (Rep.), inaugurated in January, 1941, for a two-year term; Secretary of State, Frederick Robie; Attorney General, Frank I. Cowan; State Treasurer, Belmont Smith; State Auditor, William D. Hayes; State Comptroller, Harold E. Rodgers. Chief Justice of the Maine Supreme Judicial Court is Guy H. Sturgis; there are five associate members appointed for seven-year terms.

See PORTS AND HARBORS.

MALACCA. See BRITISH MALAYA.

MALAY STATES. See BRITISH MALAYA.

MALDIVE ARCHIPELAGO. See under CEYLON.

MALTA. A British colony in the Mediterranean, consisting of the islands of Malta (95 sq. mi.), Gozo (26 sq. mi.), and Comino (1 sq. mi.). Civil population (Jan. 1, 1939), 268,668. Capital, Valletta. Vital statistics (1938): 8,704 births, 5,399 deaths, and 1,778 marriages. Education (1938-39): 168 schools of all kinds and 34,846 students. *Malta is*

an important naval base for the British Mediterranean Fleet.

Production and Trade. Barley, wheat, potatoes, maize, oranges, figs, honey, grapes, and cotton are the main products. Livestock (1939): 34,470 goats, 15,936 sheep, 6,707 swine, 4,540 cattle, and 8,799 horses, donkeys, and mules. Trade (1939): £4,167,465 for imports and £659,812 (including reexports of £433,756) for exports. Shipping (1938): 2,512 ships aggregating 4,488,153 tons entered the ports. Roads (1940): 521 miles.

Government. The deficit for the year 1940-41 of £1,012,000 was met by an Imperial government grant of £1,000,000. For the year ending Mar. 31, 1942, the deficit was estimated at £662,000. Malta is governed according to Letters Patent of Feb. 14, 1939, promulgated on Feb. 26, 1939, which granted a new constitution under which there is a council of government of 20 members (5 ex-officio, 3 official, 2 unofficial nominated by the governor, and 10 elected) presided over by the governor who has a casting but no original vote. English and Maltese are the official languages of Malta. Governor and Commander-in-Chief, Maj.-Gen. Sir William Dobbie (appointed May 20, 1941); Lieutenant Governor, Sir Edward Jackson (appointed Jan. 12, 1940).

History. It was announced in January, 1941, that air-raid shelters were available for all the inhabitants of Malta. Along all the main roads slip trenches had been cut in the rock at five-minute intervals. The increased garrison and the thousands of local men in the armed forces receiving good wages was an offset to any depression which might have resulted from the complete interruption of foreign trade. A decree, announced on Feb. 20, 1941, was issued mobilizing all men in Malta between the ages of 16 and 56 years, for either military or noncombatant service. Those called up for immediate military service were the six classes of 20 to 25 years, inclusive.

On July 26, 1941, British artillery and aircraft repelled an Italian naval attack, by small craft, on the harbor at Valletta. It was revealed during September that Malta, which had been raided over 773 times by enemy aircraft since the start of the war, had become a base for British aircraft operating against enemy land targets and shipping. Some 316 persons were killed and 265 seriously injured by air raids since the beginning of the war, according to a report issued in August, 1941.

Commodities placed under a uniform rationing system on Apr. 1, 1941, were sugar, laundry soap, matches, and coffee. Other restrictions prohibited the sale of tinned beef, tinned milk (except for babies and invalids), sugar for making confectionery, and coal. Gasoline and kerosene continued under severe restriction. See **WORLD WAR**.

MAMMALS. See **ZOOLOGY**.

MANADO. See **NETHERLANDS INDIES** under *Area and Population*.

MANCHOUKUO. An empire in northeastern Asia established under Japanese protection Mar. 1, 1932; comprising the former Chinese provinces of Fengtien, Kirin, and Heilungkiang in Manchuria, and Jehol and the six northern counties of Chahar in Inner Mongolia. Capital, Hsinking (formerly Changchun). Ruler, Emperor Kangtê, who was enthroned Mar. 1, 1934.

Area and Population. Including the South Manchuria Railway Zone under direct Japanese jurisdiction but excluding Kwantung (q.v.), the area of Manchoukuo is estimated by Japanese sources at

503,013 square miles. The population on Dec. 31, 1937, was estimated at 36,949,975, including 35,533,729 Manchoukuoans (predominantly Chinese, with Manchu and Mongol minorities), 931,300 Koreans, 418,300 Japanese, and 66,326 others, mainly Russians. The population of Mukden on Dec. 31, 1938, was 810,465, and of the other chief cities on June 30, 1938: Harbin, 467,483; Hsinking, 360,294; Antung, 210,759; Kirin, 132,272; Yingkow, 159,470. The net immigration of Chinese laborers in 1938 was 291,097; of Korean peasants, 15,850.

Defense. The regular army of Manchoukuo, officered and trained mainly by Japanese, numbered about 80,000 in 1939. A law of Apr. 11, 1940, provided for a compulsory three-year term of military service for all men between 19 and 40. The navy comprised 1 destroyer, 15 gunboats, 6 patrol vessels, and various smaller craft, most of them modern.

Education and Religion. Education statistics for June, 1939, showed 15,877 primary schools with 1,579,169 pupils; 254 secondary schools, with 60,368 pupils; 14 colleges, with 4,372 students; 16 normal schools, with 4,045 students; and 65 vocational schools, with 5,043 students. According to a Japanese source, there were on Dec. 31, 1937, 1,770,692 Buddhists, 377,337 Taoists, 153,844 Roman Catholics, 132,636 Mohammedans, and 51,393 Protestants. Lamaism was believed to have far more adherents than Buddhism, but no statistics as to their number were available.

Production. Agriculture supports about 85 per cent of the population. Yields of the chief crops in 1940 were officially estimated to total 18,000,000 metric tons, divided as follows: Soybeans, 3,800,000; kaoliang, 4,407,000; millet, 3,900,000; corn, 3,100,000; wheat, 807,000; perilla seed, 47,000; cotton, about 75,000 bales (of 500 lb.), beet sugar, 25,800; rice, 870,000; tobacco, flue-cured, 12,000 to 14,000; flax, 3,000. Livestock in September, 1937, included 1,683,200 cattle, 1,965,900 sheep, 5,335,800 swine, 1,243,000 goats, and 12,800 camels. The wool clip in 1937 was about 7,000,000 lb. Coal and lignite output in 1937 was about 14,100,000 metric tons; iron ore, pig iron, steel, magnesite, gold, lead, and oil shale are the other chief minerals and metals (for latest available figures, 1936, see **YEAR BOOK**, 1938). On Dec. 31, 1938, there were 3,900 industrial establishments and business concerns, including 712 manufacturing plants, 186 mining and ceramics concerns, 28 electric and gas industries, and 2,062 banking and commercial enterprises.

Foreign Trade. Imports in 1939 totaled 1,783,366,000 yuan (1,274,748,000 in 1938); exports, 826,190,000 yuan (725,454,000). Of the 1939 imports, Japan supplied 1,505,011,000 yuan; United States, 87,739,000; China, 64,226,000; Germany, 51,786,000. Japan took 516,792,000 yuan worth of exports in 1939, China, 165,207,000; Germany, 50,358,000. Leading 1939 exports: Soybeans, 206,378,000 yuan; bean cakes, 123,958,000 yuan; coal, 24,059,000 yuan.

Finance. The general accounts or administrative budget for 1941 balanced at 649,220,000 yuan (642,832,000 yuan in 1940, final returns). The 1941 special accounts budget placed revenues at 1,849,077,161 and expenditures at 1,758,175,290 yuan (1,997,000,000 and 1,905,000,000, respectively, in 1940). Excluding transfers between general and special accounts, net revenue in 1941 was estimated at 1,800,000,000 and net expenditure at 1,787,000,000 yuan. Of the total net revenue, 386,000,000 yuan were to be borrowed and the balance met by taxes and receipts from government enter-

prises. Public debt on Dec. 31, 1938, was 858,918,-000 yuan (346,750,000 borrowed in Japan). The Manchoukuoan yuan was pegged to the yen (1 yuan equals 1 yen) on Oct. 28, 1935.

Transportation. In May, 1940, Manchoukuo had 7,380 miles of railway line, an increase of 1,500 miles in the preceding three years. A total of 210 miles were completed during 1940 (calendar year). All lines were owned or operated by the South Manchuria Railway Co., controlled by the Japanese Government. The company's total revenues in 1940 were 799,000,000 yen; expenditures, 722,000,000; profits, 77,000,000. Highways suitable for motor traffic extended about 27,960 miles in 1940; bus routes in operation Jan. 1, 1941, about 27,838 miles. Construction of highways of strategic importance was pushed during 1941. A network of airlines connects all of the principal cities with those of Japan, Korea, and North China. A twice-weekly express air service between Hsinking and Tokyo was inaugurated in 1941. Steamer services are maintained over 4,222 miles of inland waterways. Normally three-fourths of Manchoukuo's trade passes through Dairen. New trade outlets are being developed at Rashin, Korea, and Tatung, situated at the mouth of the Yalu River.

Government. Under the Constitution of Mar. 1, 1934, as amended July 1, 1937, Manchoukuo is a monarchy in which the Emperor exercises both executive and legislative powers, the latter being subject to the approval of the Legislative Council, an advisory body appointed by the Emperor. There is also a Privy Council of five members; a State Council, or cabinet, of six departments; and a General Affairs Board, attached to the State Council, which supervises budgets and national policies.

Under a protocol signed Sept. 15, 1932, Manchoukuo and Japan agreed "to cooperate in the maintenance of their national security; it being understood that such Japanese forces as may be necessary for this purpose shall be stationed in Manchoukuo." Actually, the government is controlled by the Japanese Ambassador to Manchoukuo, who is also commander-in-chief of the Japanese and Manchoukuoan troops in Manchoukuo and Kwantung (q.v.). Japanese Ambassador and commander-in-chief in 1941, Lieut. Gen. Yoshikiro Umezu (appointed, September, 1939). Prime Minister, Marshal Chang Ching-hui (appointed Mar. 21, 1935).

History. Great and fairly successful efforts on the part of the Japanese authorities drew out of Manchoukuo the highest output of needed goods that the incompletely developed industries of the region could deliver. The mining of coal attained a rate said to approximate 12 or 13 times that of ten years earlier. While a great part of the coal went to Japan, rising domestic industries—particularly steel-making—consumed more of Manchoukuo's coal than before. The lack of an established industrial population limited the possibility of bigger production in the one direction, while German failure to deliver previously ordered heavy machinery delayed the alternative possibility of making great and intricate mechanism fill the place of workmen. President Aikawa of the Manchuria Industrial Development Corporation told in September, in a Tokyo newspaper, of the need for large-scale machinery in Manchoukuo and of his vain attempts to get such machinery, first in the United States, then in Germany.

Leading Manchoukuoan crops totaled less than the quantities at which Japanese economic planners had aimed despite the state bounties offered. In connection with the mediocre crops, lack of available labor, and pressure on producers, there oc-

curred a rise during 1941 in Manchoukuoan wholesale prices; in April, these reportedly averaged 10 per cent higher than one year before.

Various Japanese measures sought to speed the rate of Manchoukuoan development. Not only did a law regulating labor undergo such amendment as would permit requisitioning needed workers, but according to report the government planned to introduce compulsory labor early in 1942. Meanwhile the importation of a great variety of goods for common consumption—such as watches, spectacles, and shoes—was put in the hands of monopolies.

Discoveries of platinum in the valley of the Muta River were reported. The mining of copper ore was stimulated by bounties. The country continued to absorb all available investing power. The amounts and placements of yearly investments were planned, like other features of the land's development; according to report in June, the plan for investments in the year beginning with April, 1941, called for 2.2 billions of Manchoukuoan yuan, of which half from Manchoukuo, half from Japan. The two chief purveying bodies—the Government and the Industrial Development Corporation—were to provide between one-fifth and one-sixth apiece of the total.

During August and September the borders of Manchoukuo and Siberia passed through more of their familiar experience of that confused condition which was neither war nor peace. Encounters were reported, a Japanese movement in force against Vladivostok was made imminent by the Japanese preliminary dispositions, and inhabitants were ordered at one time from the northwestern corner of Manchoukuo's territory.

See CHINA, JAPAN, MONGOLIA, and UNION OF SOVIET SOCIALIST REPUBLICS, under *History*; *FASCISM*; *SEISMOLOGY*.

MANDATED TERRITORIES. Following is a list (as of Dec. 31, 1941) of territories conquered from the German and Turkish empires during World War I and mandated by the League of Nations to various of the Allied Powers under the terms of the Treaty of Versailles.

Mandated Territory*	Mandatory Power	Former Owner
Camerouns, British	Great Britain	Germany
Cameroun, French	France	Germany
Japanese Pacific Islands	Japan	Germany
Nauru	British Empire	Germany
New Guinea, Territory of	Australia	Germany
Palestine . . .	Great Britain	Turkey
Ruanda-Urundi . . .	Belgium	Germany
Samoa, Western	New Zealand	Germany
South-West Africa	Union of South Africa	Germany
Syria and Lebanon	France	Turkey
Tanganyika Territory	Great Britain	Germany
Togo, French	France	Germany
Togoland	Great Britain	Germany

* Iraq, a territory mandated to Great Britain, became an independent State by treaty with the mandatory power on June 30, 1930.

See the separate article on each mandated territory.

MANGANESE. Manganese was one of the most vital strategic metals for the United States in 1941 and of them all was needed in the largest quantities. About 12½ lb. go to desulphurize and deoxidize every short ton of steel; and the United States produces only 3 per cent of its own total needs. Ninety-seven per cent has to be imported; and very little ore arrived from Russia in 1941, which supplied 25 per cent of the United States' imported manganese in 1940. There were no imports from Puerto Rico in 1940 or '41. Only high-grade ore, like the Russian, containing 48 per cent plus of manganese is

used to make ferromanganese, the form in which it is added in the manufacture of steel. Although the United States possesses large deposits of low-grade ores they could not be tapped for any emergency, because the industry had never developed a process for producing suitable ferromanganese from them.

Imports, therefore, were stepped up enormously in 1941, especially from Brazil and Cuba. Cuba sent the United States 245,000 tons, 85 per cent more than in 1940. Cuban ore contains few impurities and is therefore valuable for the manufacture of ferromanganese. Brazilian shipments showed a 70 per cent increase, British Indian, 15 per cent, and South African shipments went up 10 per cent. Total imports of manganese ore for 1941 were 794,516 long tons, January–September. Shipments of manganese ore containing over 35 per cent of natural manganese from domestic mines were about 76,000 long tons, 35,877 long tons more than in 1940. Domestic ferruginous manganese ore was about 459,000 long tons; manganiferous iron ore about 820,000 long tons.

Since high-grade manganese ore is rare in the United States and low-grade deposits plentiful, large-scale domestic production is possible only through beneficiation of low-grade materials. The government appropriated an annual \$500,000 (1940–43) to the U.S. Bureau of Mines and Geological Survey to search for and examine manganese ore deposits. By the end of spring, 1941, 375 deposits were examined. An additional \$2,000,000 was appropriated to the Bureau to construct and operate pilot plants to beneficiate low-grade manganese ores. By September definite success was reported. Concentrates with high manganese content ores were produced from the low-grade deposits in the Las Vegas, Nevada area. And laboratory tests definitely proved that a process could be applied which would enable the United States to supply more than half of its war requirements of manganese from its own resources.

The following table from the U.S. Bureau of Census shows the imports of metallurgical manganese ore (35 per cent or more Mn) during the nine months ending Sept. 30, 1941, in long tons:

Country	Imports for consumption ^a		General imports ^b	
	Gross weight	Manganese content	Gross weight	Manganese content
Belgian Congo			19,482	9,741
Bolivia	95	50	95	50
Brazil	208,970	94,106	235,103	101,996
Chile	8,431	3,969	8,498	3,971
Cuba	164,819	78,115	164,819	78,115
Gold Coast	138,301	69,714	28,434	14,496
India, British	149,604	75,790	177,729	88,452
Mexico	458	226	672	314
Morocco	113	51	25	14
Netherlands				
Indies	3,511	1,873	3,511	1,873
Peru				
Philippine Islands	46,274	22,213	46,274	22,213
U.S.S.R.	28,122	14,589		
Union of South Africa	45,818	21,202	153,597	72,506
	794,516	381,898	838,239	393,741

^a Comprises ore withdrawn from bonded warehouses, irrespective of the year of importation, and ore received in this country during first 9 months of 1941 for immediate consumption.

^b Comprises ore received in this country during first 9 months of 1941, of which part went into immediate consumption and the remainder entered bonded warehouses.

^c Less than one-half ton.

See CHEMISTRY, INDUSTRIAL under *Metals*; GEOLOGICAL SURVEY.

MANITOBA. A prairie province of Canada, between Ontario and Saskatchewan. Area, 246,512 square miles, including 26,789 sq. mi. of fresh water. Pop-

ulation (1941 census), 722,447, compared with (1936 census) 711,216. Vital statistics (1940): 14,771 living births, 6,339 deaths, 8,349 marriages. Chief cities (1941 census figures): Winnipeg, capital (217,994), St. Boniface (17,995), Brandon (16,975), Portage la Prairie (7,095). Education (1939): 157,438 students enrolled in schools and colleges.

Production. The 1940 gross value of agricultural production was \$102,253,000 (field crops \$59,800,000, farm animals \$17,065,000, dairy products \$16,990,000, poultry products \$4,622,000, fruits and vegetables \$2,244,000, fur farming \$754,000). Wheat (66,000,000 bu.), oats (33,000,000 bu.), barley (27,500,000 bu.), rye (2,250,000 bu.), flaxseed (800,000 bu.), potatoes (89,200 tons), roots (21,850 tons), hay (751,000 tons), fodder corn (358,000 tons), and sugar beets (95,100 tons) were the main crops (1940). Livestock (June 1, 1940): 772,700 cattle (including 350,400 milk cows), 462,700 swine, 323,000 horses, 234,000 sheep, 6,351,000 poultry. Fur production (1938–39): 475,406 pelts worth \$1,267,664. The forestry output for 1939 was valued at \$2,672,000. Fisheries catch (1940): 1,750 short tons valued (as marketed) at \$1,988,500.

Mineral production (1939) was valued at \$17,137,930 of which copper (70,458,890 lb.) accounted for \$7,110,711, gold (180,875 fine oz.) \$6,537,003, zinc (40,302,747 lb.) \$1,236,891, silver (1,028,485 fine oz.) \$416,413. Manufacturing (1939): 1,087 factories, 23,910 employees, \$48,810,544 net value of products.

Government. Revenue and expenditure for the year ended Apr. 30, 1940, was estimated to balance at \$20,223,411. Net funded debt (Apr. 30, 1940): \$116,227,084. The executive power is vested in a lieutenant governor who is advised by a ministry, or cabinet, of the legislature. In the legislative assembly there are 55 members elected for a five-year term by popular vote of the adult population (on Apr. 22, 1941, the provincial general election returned to power the coalition government of John Bracken). Six senators (appointed for life) and 17 elected commoners represent Manitoba in the Federal parliament at Ottawa. Lieutenant Governor, R. F. McWilliams (appointed Nov. 1, 1940); Premier, John Bracken (Liberal-Progressive).

MANUFACTURING. See BUSINESS REVIEW and other articles on industry; ELECTRICAL INDUSTRIES; the countries under *Manufacturing* or *Production*; the States under *Manufacturing*.

MAPLE PRODUCTS. See SUGAR.

MAPPING, MAPS. See AGRICULTURE, U.S. DEPARTMENT OF under *Soil Conservation*; GEOLOGICAL SURVEY. For WEATHER MAPS see METEOROLOGY.

MARIANA ISLANDS. See JAPANESE PACIFIC ISLANDS.

MARIHUANA. See NARCOTIC DRUGS CONTROL.

MARINE ENGINEERING. See SHIPBUILDING.

MARITIME COMMISSION, U.S. See SHIPBUILDING; SHIPPING; also, INSURANCE; LEND-LEASE ADMINISTRATION.

MARITIME SERVICE. See COAST GUARD, U.S.

MARKETING. The rise in the national income to the highest level yet recorded and the rapid shift in the national economy from a peace to a war basis expanded the physical volume of wholesale and retail trade to record proportions. Prices were regulated in many instances by ceilings set by the Office of Price Administration (q.v.) or by the action of other Government agencies, such as the Department of Agriculture and import organizations like the Rubber Reserve Company and the Metals Reserve Com-

pany. Sellers' markets prevailed generally, as demand surpassed the volume of production and shortages developed. However, priority restrictions limited the ability of sellers to dispose of their goods as they preferred. In some fields, such as copper and other strategic metals and tires and tubes, available supplies were being strictly rationed by the end of the year for the benefit of defense and essential civilian users.

Purchasing agents were confronted with particularly difficult decisions. The rising price trend and the difficulty of obtaining deliveries would ordinarily have made desirable a very aggressive forward buying policy. However, even where goods could be secured, many purchasing men were inclined to hesitate about ordering ahead liberally. In the case of strategic materials and products, the OPM commandeered stocks in the hands of manufacturers and distributors when real shortages developed. Thus, when new car production was halted in December, even stocks in dealers' hands were frozen and could be disposed of only with the approval of the OPM (q.v.) to specified groups of buyers. Secondly, there was the ever-present uncertainty as to the likely duration of the war and the great probability of a sharp decline in commodity prices when the stimulus of armament had been withdrawn. Even those who looked for a "reconstruction boom" immediately after the war were far less sanguine about economic prospects thereafter.

Raw Materials Marketing. The marketing of raw materials was more affected by the war, and the Government controls to which it gave rise, than any other branch of the field of distribution. The demand for agricultural commodities expanded, due both to higher domestic consumption and lease-lend needs. The Department of Agriculture urged farmers and livestock producers to expand their output, and favored a higher price policy to stimulate output. The marketing of a number of crops was dominated by Government buying and loans to growers. Congress in May passed a resolution requiring the Commodity Credit Corporation to lend farmers 85 per cent of parity (prices that give the farmer the same purchasing power for industrial products that he possessed in 1910-14), thus placing a floor under the quotations for cotton, wheat, corn, rice, and tobacco. The farm bloc in Congress fought stubbornly against any price control legislation that would permit the placing of ceilings on agricultural commodities at a level of less than 110 per cent of parity, and some members of the bloc sought even a higher schedule of ceilings. At the same time, the Commodity Credit Corporation sought to prevent prices of basic farm products from rising too far above parity, offering some of its holdings of cotton, wheat, and corn in the market for sale late in the year when prices displayed marked strength.

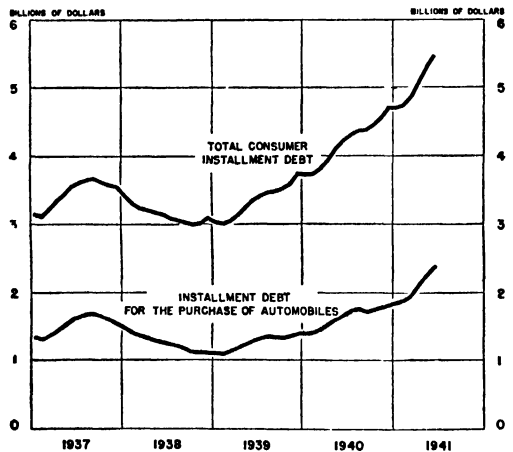
The marketing of virtually all imported commodities was disrupted by the war. The outbreak of hostilities in the Pacific in December made further receipts of rubber and tin from the British and Dutch possessions and of sugar and coconut oil from the Philippines highly uncertain. The Government had taken over in full the importation of crude rubber earlier in the year, and extended its control over other imported products important to the defense program. The shipping shortage limited imports of other commodities, the U.S. Maritime Commission assuming full control over the allocation of ship space to different types of imports. This control was implemented by Congress through the enactment of the Ship Warrant Act, which prevented any vessel from utilizing port facilities in this country unless it had obtained a warrant to do so from the

Commission. In some cases, Government agencies bought supplies of raw materials abroad, regardless of price considerations, to keep them from finding their way into the Axis countries. The purchase of the Argentine tungsten supply was a case in point.

The establishment of price ceilings brought about a cessation of trading on a number of commodity futures exchanges. In other cases, trading was halted by a lack of supplies, as in raw silk. These markets, as a result, were largely concerned with liquidation of old contracts by the end of the year. The turnover on all futures exchanges aggregated 2,349,000 contracts, which compared with 2,135,000 contracts in 1940. Once price ceilings have been established, the need for hedging facilities disappears for the time being, while there is also no speculative incentive to trade in such markets. Hence, the extension of Government price control indicated that, as in the first World War, these markets would gradually cease to function until restrictions could be relaxed.

Wholesale Trade. Various branches of wholesale trade were affected differently by the nation's adjustment to a war economy. Some dealers in strategic materials, such as rubber, became Government agents, performing services for a commission. Other wholesale groups found their volume of business declining during the year, but were able to widen profit margins where ceilings were not placed upon their resale prices. Government purchases of defense and other supplies directly from manufacturers adversely affected the business of a number of wholesalers. (See BUSINESS REVIEW.)

Retail Trade. Department store sales increased 17 per cent as compared with 1940, according to the Board of Governors of the Federal Reserve System. (See BUSINESS REVIEW.) Dealers in durable consumer goods, particularly automobiles, were seriously affected at the close of the year by the curtailment and final halt of production of such products. At the same time, OPA intervened to discourage or prevent price increases which would offset the severe decline in sales volume of retailers in this



Source: U.S. Department of Commerce

CONSUMER INSTALMENT DEBT

field. Retailers handling imported goods were similarly hampered where they could not obtain domestic products to sell in their place.

Instalment sales terms were brought under Federal Regulation for the first time when the President, by an Executive Order issued August 9, authorized the Board of Governors of the Federal Reserve System to set minimum down payments and

maximum maturities on instalment paper. This action was taken under the Trading with the Enemy Act of 1917, and was based on the national emergency. The Board of Governors issued Regulation W, which went into effect September 1, which set minimum cash down payments of 33½ per cent on new and used cars, 20 per cent on refrigerators and 10 per cent on new household furniture. The maximum maturity on all instalment paper was made 18 months. The effect of this regulation, which presumably will expire at the end of the emergency, will be obscured by the fact that production limitations prevent the sale of goods customarily sold on the instalment plan.

The Department of Justice pursued its broad investigation into food distribution for the avowed triple purpose of ending violations of the anti-trust laws, reducing the cost of living, and increasing farmers' incomes. An outgrowth of this investigation was the indictment of a number of grocery concerns in Connecticut for alleged horizontal price fixing and a group of bakeries and chain stores in Washington, D.C., for allegedly conspiring to fix the price of bread sold in these stores.

See AGRICULTURAL, COOPERATION; AGRICULTURE, U.S. DEPARTMENT OF, BUSINESS REVIEW.

JULES I. BOGEN.

MARQUESAS ISLANDS. See OCEANIA, FRENCH.

MARRIAGE. See BIRTH CONTROL; ARKANSAS under Legislation, VITAL STATISTICS

MARSHALL ISLANDS. See JAPANESE PACIFIC ISLANDS.

MARTINIQUE. A French island colony in the West Indies, between the British islands of Dominica and St. Lucia Area, 385 square miles; population (Jan. 1, 1938), 255,000. Fort-de-France, the capital, had 52,051 inhabitants; Le Lamentin, 16,303. Education (1938): 32,870 pupils in schools of all kinds. Sugar, cacao, bananas, pineapples, and rum are the main products. Trade (1938): U.S.A. \$6,756,000 for imports and U.S.A. \$8,918,000 for exports. Budget (1937): 101,100,000 francs. Governor, Yves Nicolle (appointed Dec. 13, 1940).

History. On May 21, 1941, a report from Panama stated that Martinique had become a propaganda center for the Caribbean area and Latin America in the distribution of Vichy "information" that aided the Axis Powers. Among mailed propaganda was a thirty-page weekly bulletin printed in Fort-de-France and issued by the Central Information Service of the French West Indies.

In a letter to Senator James M. Mead of New York, dated June 2, 1941, the U.S. Secretary of State wrote that ". . . the policy of this Government as regards the French West Indies, which includes all territories subject to the jurisdiction of the High Commissioner for French territories in the Western Hemisphere, is governed by an agreement entered into at the Havana Conference in 1940 by all the American Republics, including the United States, as well as by the arrangement entered into between the High Commissioner and Admiral Greenslade, U.S.N., and later confirmed by both Governments. This arrangement provides certain guarantees regarding the movement of French vessels in American waters and commits the French Government to prior notification regarding any shipments of gold. It also permits the establishment of a daily patrol by vessel and by plane of the Islands of Martinique and Guadeloupe, and a Naval observer is at present stationed at Fort-de-France, Martinique, to check its observance.

"This government is also releasing on a monthly

basis a restricted amount from French funds blocked in this country to permit the Islands to make purchases in this country of foodstuffs and essential supplies to maintain the economic structure of the Islands and French Guiana. . . ." For the full text of the foregoing letter see the *Department of State Bulletin* (Washington, June 14, 1941; p. 720).

A new naval accord was reached, Dec. 18, 1941, between the United States (represented by Rear Admiral Frederick Horne) and Martinique (represented by Admiral Georges Robert, French High Commissioner at Martinique). This new agreement constituted a continuation of the status quo agreement reached with officials of the islands at the time the United States acquired bases in British West Indian colonies. There were supplements in the new agreement regarding shipping facilities for the continued supply of food and other vital commodities to the people of Martinique.

MARYLAND. A South Atlantic State. Area: 10,577 sq. mi., including 690 sq. mi. of inland water; but excluding part of Chesapeake Bay, 1,726 sq. mi. Population (1940 census): 1,821,244. The urban population comprises 59.3 per cent of the total (U.S. average, 56.5 per cent); non-white population, 16.7 per cent (U.S. average, 10.2); elderly (65 years and over), 6.7 per cent. Maryland ranks 41st among the States in Area, 28th in population, and 7th in density, with an average 184.2 persons per square mile. The capital is Annapolis with 13,069 inhabitants; largest city, Baltimore, 859,100. There are 23 counties and nine cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education, there were 293,686 pupils enrolled in the State School System of Maryland during the school year 1937-38. Of this total, 232,423 were enrolled in kindergartens and elementary schools and 61,263 in secondary schools; 58,531 were in separate Negro schools. The instructional staff comprised 8,962 persons, who received an annual average salary of \$1,564 (U.S. average: \$1,374); 1,566 or 18.3 per cent were men. Expenditures for all public schools in 1937-38 were \$24,409,537, making a total cost per capita of \$14.49 (U.S. average: \$17.15). There were 1,402 school buildings in the State, of which 558 were one-room, one-teacher schools. The value of public property used for school purposes was \$81,336,202. For higher education, see under *Maryland* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 4,187, of which 4,187 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 450,169; 383,974 were private and commercial automobiles, 1,136 busses, and 59,422 trucks and tractor trucks. Gross motor-fuel consumption was 314,606,000 gal. Net motor-fuel tax receipts were \$11,448,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$6,698,000.

Railways of all classes extended 1,374 miles (Dec. 31, 1939). 58 per cent of the total mileage in the United States. Class I steam railways (584 miles) reported 9,145,081 tons of revenue freight originating in Maryland in 1940 and 18,121,734 tons terminating in Maryland. There are 21 airports and landing fields in the State (four lighted fields) and four seaplane bases and anchorages. On July 1, 1941,

according to the Civil Aeronautics Authority, there were 316 civil aircraft in the State and 899 airline transport, commercial, and private pilots (764 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 1,594,300, as compared with 1,620,400 acres in 1940. According to the latest census, there are 42,110 farms, valued at \$273,980,352, averaging 99.7 acres each. Farm population numbered 244,900 or 13.4 per cent of the total. Leading crops with production in 1941 were: Commercial truck crops, \$11,961,000; corn, \$11,676,000, 15,164,000 bu.; tobacco, \$10,438,000, 29,833,000 lb.; wheat, \$7,752,000, 7,245,000 bu.; hay, \$6,918,000, 475,000 tons.

Manufacturing. According to the 1939 Census of Manufactures, there were 2,893 manufacturing establishments in Maryland, employing 141,643 wage earners who received \$156,782,654 in wages for the year. The total value of products was \$1,027,354,074; value added by manufacture, \$422,849,359.

Mineral Production. The total value of minerals produced in 1939 was \$11,837,593, according to the U.S. Bureau of Mines, less than 1/10 per cent of the United States total. Chief items were stone, sand and gravel, cement, clay products, and slate.

Trade. According to the 1940 census there were 2,464 wholesale establishments in Maryland, employing 23,533 persons, reporting net sales for 1939 of \$688,989,000 and annual pay roll of \$33,412,000. There were 25,566 retail stores with 70,750 employees, reporting sales of \$619,273,000 and pay roll of \$66,079,000. Service establishments numbered 8,497, employing 17,461 persons for \$15,498,000 per year, and reporting a business volume amounting to \$45,218,000. The leading business center of the State is Baltimore which reported wholesale sales of \$578,628,000 and retail sales of \$380,103,000. Cumberland reported sales of \$12,854,000 wholesale and \$21,415,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Maryland was \$24,304,000. Under the Social Security program, financed by Federal funds matching State grants, 17,942 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$17.85 (U.S. average pension, \$21.08); 17,740 dependent children in 6,531 families received average monthly payments of \$30.53 per family (U.S. average, \$32.73), and 671 blind persons received \$21.57 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 7,240 and received \$20.20 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 924 (\$61,000); NYA student work program, 3,382 (\$21,000); NYA out-of-school work program, 6,495 (\$122,000); WPA, 8,172 (\$548,000); other Federal emergency projects, 80 (\$7,000); regular Federal construction projects, 20,059 (\$3,244,000). The Farm Security Administration certified subsistence payments totaling \$3,000 for the month to 158 cases.

Legislation. The General Assembly convenes in regular session on the first Wednesday of January in odd years. It is composed of 29 Senators (23 Democrats and 6 Republicans in 1941) and 120 Representatives (104 Democrats and 16 Republicans).

Conservation was one of the most important subjects among the numerous laws enacted at the 1941 legislative session. Laws were enacted creating the

Board of Natural Resources, Department of Tide-water Fisheries, Department of Game and Inland Fish, Department of Geology, Mines and Water Resources, and the Department of Forests and Parks, all relating to the conservation of natural resources. The Atlantic States Marine Fisheries Commission was established to provide for the better utilization of marine fisheries by agreement with other States. The game laws were generally amended, with provision for the appointment of wildlife technicians. The Conservation Commission was authorized to regulate or prohibit the catching, packing, or shipping of crabs. Fifteen new sections were enacted relating to the licensing and regulation of the taking of fin fish for commercial purposes with nets in tidal waters. The Department of Forestry was granted additional powers relating to use of fire in open air. Provision was made for prosecuting trespass in other persons' blinds. By joint resolution the Governor was requested to appoint a Soil Erosion Commission and the State Department of Health was requested to abate the pollution of the Potomac River.

A number of new laws resulted from the national emergency. A Maryland Council of Defense and a Maryland State Guard were created. An emergency anti-sabotage law provided for the protection of property against unlawful entries, injuries, etc. Housing authorities were authorized to cooperate in providing housing facilities for persons engaged in defense activities. Several laws guaranteed certain rights and privileges for persons serving in the armed forces.

The insurance laws were tightened in several respects, and advertisements were prohibited regarding insurance in unlicensed companies. Incorporated fire companies were exempted from real and personal property taxation. Certain property of certain cooperative associations was also exempted from taxation. Building and loan associations were required to submit reports to the State Tax Commission, and provision was made for licensing those engaged in the sales finance business. The Omnibus Bequest Bill sanctioned certain bequests, conveyances, etc., to certain charitable, religious, and educational institutions.

A Commission was created to investigate the subject of delinquent and dependent children, and the establishment of Juvenile Courts was provided for. The taking of blood tests to determine parentage in bastardy cases was authorized. The period for divorce on account of abandonment was reduced to 18 months, and divorces were legalized in cases where one spouse is incurably insane. The Board of Parole and Probation was supplanted by a Department of Parole and Probation, and the Board of Correction was instructed to establish the Women's Prison.

The Unemployment Compensation laws were amended generally, and five commissioners were provided to administer the State accident fund. Penalties were prescribed for misuse of public assistance lists. A number of local laws regulated the sale or consumption of alcoholic beverages; Sunday sales were prohibited in various counties.

A Commission was created to study the entire subject of motor vehicle registration and control. A Maryland Traffic Safety Commission was created, and motor vehicle license examiners were placed under the Merit System. The license fee for chauffeurs was reduced. Instruction in safe driving was provided in county high schools. Another school law equalized the salaries in the elementary and high schools of the State for white and colored children.

Miscellaneous acts of general interest included ratification of the 19th Amendment; a Fair Trade Act, making it unlawful to advertise or sell merchandise at less than cost, a law against sit-down strikes; fixation of the State tax rate for 1942 and 1943 at 11 and 20 $\frac{1}{4}$ cents respectively; the granting of additional powers to cities and counties to aid housing projects, the creating of a State Employees' Standard Salary Board, a law requiring physicians, hospitals, etc., to report injuries from auto accidents or deadly weapons; a fireworks law. The White Oak was named as the State tree. The Chief of Mine Engineers became Director of the Bureau of Mines. Bingo was legalized in Baltimore County and the city of Baltimore was authorized to issue \$32,000,000 of water bonds.

Reference: *Synopsis of Laws Enacted by the State of Maryland Legislative Session, 1941*, compiled by Horace E. Flack, Department of Legislative Reference.

Finances. Total tax collections in Maryland for the fiscal year ending in June, 1940, were \$56,899,000. Total sales taxes amounted to \$16,792,000, including motor fuel, \$11,232,000. Taxes on specific businesses ran to \$6,576,000, general and selective property, \$5,781,000, unemployment compensation (1941), \$57,208,000. The net income taxes were \$7,637,000. Cost payments for the operation of general government totaled \$42,573,000 in 1939, the latest year available. (Revenues for the general government for that year were \$61,159,000.) Cost of operation per capita was \$23.64. Total gross debt outstanding in 1941 was \$53,485,000, as compared with \$32,096,000 in 1932.

Officers and Judiciary. The Governor is Herbert R. O'Connor (Dem.), inaugurated in January, 1939, for a four-year term, Secretary of State, Francis Petrott, Attorney General, William C. Walsh, State Treasurer, Hooper S. Miles, State Comptroller, J. Millard Tawes, State Auditor, Daniel L. Clayland, 3d. Chief Judge of the Maryland Court of Appeals is Carroll T. Bond, there are seven associate members elected by popular vote for 15-year terms.

See FIRE PROTECTION; LABOR LEGISLATION.

MASSACHUSETTS. A New England State. Area: 8,257 sq. mi., including 350 sq. mi. of inland water, but excluding Atlantic coastal waters, 959 sq. mi. Population: (1940 census) 4,316,721. The urban population comprises 89.4 per cent of the total (U.S. average, 56.5 per cent); non-white population, 1.4 per cent (U.S. average, 10.2); elderly (65 years and over), 8.5 per cent. Massachusetts ranks 44th among the States in area, eighth in population, and third in density, with an average of 545.9 persons per sq. mi. There are 14 counties and 78 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Walter F. Downey, Commissioner of Education, there were 700,305 pupils enrolled in the public schools of Massachusetts during the school year 1939-40, 410,141 in elementary schools, 107,622 in Junior High Schools, and 182,542 in secondary schools. Principals, supervisors, and teachers numbered 25,656 and received an annual average salary of \$1,959 (estimated). Total expenditures for the year were \$69,818,825.88 for support and \$4,586,945.27 for outlay.

Transportation. State highway mileage in 1939, including streets under State control, totaled 1,888, of which all was surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 907,862; 790,312 were private and commercial automobiles, 4,889 busses, and 108,642

trucks and tractor trucks. Gross motor-fuel consumption was 747,204,000 gallons. Net motor-fuel tax receipts were \$21,454,000, the rate being three cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$7,319,000.

Railways of all classes extended 1,792 miles (Dec. 31, 1939) .76 per cent of the total mileage in the United States. Class I steam railways accounted for 810 miles. There are 42 airports and landing fields in the State (five lighted fields) and 40 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 507 civil aircraft in the State and 1,955 airline transport, commercial, and private pilots (1,592 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 418,900, as compared with 410,900 acres in 1940. According to the latest census, there are 41,897 farms, valued at \$212,014,287, averaging 60.8 acres each. Farm population numbered 140,362 or 3.3 per cent of the total. Leading crops with production in 1941 were hay, with \$8,578,000 and 450,000 tons, and cranberries, with \$6,120,000 and 510,000 bbl.

Manufacturing. According to the latest census (covering the year 1939) the total value of manufactured products was \$2,459,771,043. For details, see 1940 YEAR BOOK.

Mineral Production. The total value of minerals produced in 1939 was \$8,179,860, according to the U.S. Bureau of Mines, less than two-tenths per cent of the United States total. Stone accounted for about half of the total.

Trade. According to the 1940 census there were 5,960 wholesale establishments in Massachusetts, employing 59,155 persons, reporting net sales for 1939 of \$2,232,117,000 and annual pay roll of \$112,302,000. There were 59,217 retail stores with 203,312 employees, reporting sales of \$1,735,028,000 and pay roll of \$212,966,000. Service establishments numbered 24,783, employing 41,030 persons for \$42,566,000 per year, and reporting a business volume amounting to \$138,433,000. The leading business center of the State is Boston which reported wholesale sales of \$1,634,784,000, retail sales of \$487,744,000, and \$51,956,000 receipts for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Massachusetts was \$130,360,000. Under the Social Security program, financed by Federal funds matching State grants, 87,070 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$28.92 (U.S. average pension, \$21.08); 31,234 dependent children in 12,684 families received average monthly payments of \$55.93 per family (U.S. average, \$32.73); and 1,175 blind persons received \$23.73 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 36,732 and received \$23.65 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 2,582 (\$171,000); NYA student work program, 10,389 (\$69,000); NYA out-of-school work program, 11,182 (\$243,000); WPA, 57,142 (\$4,162,000); other Federal emergency projects, 126 (\$14,000); regular Federal construction projects, 29,355 (\$5,900,000).

Legislation. The legislature, or General Court, convenes in regular session on the first Wednesday of January in odd years. It is composed of 40 Senators

(25 Republicans and 15 Democrats in 1941) and 240 Representatives (143 Republicans, 96 Democrats, and 1 vacancy).

The 152d Massachusetts Legislature ended a ten-month session, the longest in its history, at 12.10 a.m. on Nov. 1, 1941, after sitting continuously for 37 hours. The final and most dramatic action of the session was the passage of an old-age assistance liberalization tax plan over the Governor's veto. Under the plan the minimum monthly benefit for a single aged person not living with relatives was increased from \$30 to \$40, and for couples from \$50 to \$65. To finance the increase there were imposed a five per cent tax on meals bought outside the home, costing one dollar or more, and a three per cent surtax on incomes, effective Jan. 1, 1942. The Governor had contended in his veto message that the proposed taxes would fall short of paying for the increased benefits by at least \$1,450,000.

Other results of the session were summarized in part as follows by *The Christian Science Monitor* in its issue of Nov. 1, 1941:

As the 152nd Massachusetts Legislature ended its record-breaking session Gov Leverett Saltonstall was granted extraordinary powers, applicable only in wartime, under which he could take over industrial plants, food, public utilities and other property in the interest of the State and Nation. [Emergency powers were invoked and a state of emergency proclaimed by the Governor on December 29, subject to ratification by the Legislature within 60 days.] Furthermore, added powers were extended to the Massachusetts Committee on Public Safety to conduct blackouts in connection with civilian defense preparations.

During the past year the Legislature considered more than 3,700 measures, a record. From the grist of proposals in the 10-month session came several major results. They included: A record high biennial State budget of approximately \$185,000,000. A \$21,700,000 bond issue program, consisting of \$15,000,000 for elimination of sewage pollution in Boston Harbor, \$4,700,000 for new pier facilities in Boston, and \$2,000,000 for State acquisition and expansion of the East Boston airport. Continuation of the cigarette tax, previously increased liquor levies, and the 10 per cent surtax on incomes. Advancement in State budgetary control through shifting the start of the State's fiscal year from Dec 1 to July 1. This change, effective in July, 1943, was coupled with an allotment system to control quarterly departmental spending. National defense measures, under which a 6,000-man State Guard was established and equipped, and a new defense and commercial airport was established in Bedford to relieve the East Boston airport.

Organized labor gained several labor law improvements, including liberalization of the unemployment compensation law.

Besides the old-age assistance liberalization issue, several other major political issues were set up for the 1942 state-wide campaign. These include the two referenda going on the 1942 State ballot, one for a State fund for workmen's compensation and the other to legalize dissemination of birth control information. Likewise, legislative reapportionment of Massachusetts' Congressional districts to assure election of 10 Republican and four Democrats in 1942 is a major political issue.

A start was made toward reorganization of the much-criticized District Court system. Local school committees were authorized to permit school children to attend religious education classes one hour a week during school hours, while organized school groups blocked attempts to close several Teachers Colleges. Establishment of two voluntary health insurance plans was approved by the Legislature. This action staved off compulsory health insurance bills at this session.

Finances. Total tax collections in Massachusetts for the fiscal year ending in November, 1940, were \$158,726,000. Total sales taxes amounted to \$36,963,000, including motor fuel, \$21,134,000. Taxes on specific businesses ran to \$29,041,000, general and selective property, \$16,030,000, unemployment compensation \$38,323,000. The net income taxes were \$21,044,000. Cost payments for the operation of general government totaled \$142,266,000 in 1939, the latest year available. (Revenues for the general government for that year were \$163,970,000.) Cost of operation per capita was \$32.92.

Total gross debt outstanding in 1941 was \$131,813,000, as compared with \$121,067,000 in 1932.

Officers and Judiciary. The Governor is Leverett Saltonstall (Rep.), inaugurated in January, 1941, for his second two-year term; Lieutenant Governor, Horace T. Cahill; Secretary of State, Frederic W. Cook; Attorney General, Robert T. Bushnell; State Treasurer, William E. Hurley; State Auditor, Thomas J. Buckley; State Comptroller, Walter S. Morgan. Chief Justice of the Massachusetts Supreme Judicial Court is Fred T. Field; there are six associate members appointed for life.

See BIRTH CONTROL; CONSUMERS' COOPERATIVES; ELECTRIC LIGHT AND POWER, FIRE PROTECTION; LABOR LEGISLATION; PORTS AND HARBORS; PRISONS, topics listed under BOSTON.

MATANUSKA VALLEY PROJECT. See ALASKA.

MATERIALS DIVISION. See PRODUCTION MANAGEMENT, OFFICE OF.

MATERNAL WELFARE AND MORTALITY. See CHILDREN'S BUREAU.

MAURITANIA. See FRENCH WEST AFRICA.

MAURITIUS. See BRITISH EMPIRE.

MAYAN CULTURE. See ARCHEOLOGY.

MEASLES. See PUBLIC HEALTH SERVICE.

MEAT. See LIVESTOCK.

MECKLENBURG. See GERMANY under *Area and Population*.

MEDALS. See ART. For medals awarded, see the subject.

MEDIATION, Labor. See CONCILIATION SERVICE, U.S.; LABOR CONDITIONS under *Governments and Labor Disputes*; LABOR LEGISLATION; NATIONAL DEFENSE MEDIATION BOARD; NATIONAL LABOR RELATIONS BOARD.

MEDICINE AND SURGERY. Physicians and the War. The formal declaration on December 8 that a state of war existed between the government of the United States and Japan placed new responsibilities on the physicians of the United States. In addition to the thousands already in active service, more than 25,000 have given their services to the selective service boards. Since a minimum of six doctors is required for each 1,000 men under arms it is obvious that with the tremendous expansion of the armed forces, additional thousands of medical men will be required by the army, navy, and marine corps. Fortunately the medical profession is well prepared to answer the demands which may be made upon it. The problem of the appropriate selection and placement of medical personnel is simplified and expedited through the existence of the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians established in the Office of Defense Health and Welfare Services (q.v.) in November. This board will have available detailed information concerning the training, experience, and availability of all physicians in the country and should be able to supply all the medical personnel required by the various branches of the armed services while at the same time insuring that civilian requirements for medical care and the requirements for medical education will be satisfied.

Chemotherapy. Studies with a new sulfonamide compound, 2-sulfanilamido-pyrimidine prepared by Roblin and his associates, have been carried out during the past year. The name sulfadiazine has been given to this compound and has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. A preliminary report was made for the Council by Dr. Perrin H. Long in May (*J.A.M.A.*, 116, 2,399, 1941). He pointed out that the studies of Feinstone and his

co-workers had shown that the acute and chronic toxicity of sulfadiazine in experimental animals was lower than that of sulfathiazole or sulfapyridine, that higher blood concentrations were obtained after administration of equal doses of sulfadiazine, and that this new compound had a high degree of therapeutic activity in experimental pneumococcal hemolytic streptococcus and staphylococcal infections in mice. Feinstone also found that it was very effective in the treatment of experimental Friedlander's bacillus infections in mice. These results were confirmed by Long, but it was his opinion that sulfadiazine was somewhat less effective in experimental streptococcal infections in mice than sulfanilamide and slightly less effective than sulfathiazole or sulfapyridine in type I pneumococcus infections in mice. In staphylococcal infections in mice, sulfadiazine seemed to be slightly superior to sulfathiazole. In *Cl. welchii* or *Cl. septicum* infections, sulfadiazine was superior to sulfathiazole and sulfapyridine. Klinefelter also found that sulfadiazine was more effective than sulfathiazole in experimental *Escherichia coli* infections in mice. Studies of sulfadiazine in man indicated that it is somewhat less rapidly absorbed than the older sulfonamides but is excreted less rapidly, so that adequate blood concentrations may be maintained with relative ease. In contrast to sulfathiazole it diffuses into the spinal fluid in concentrations of two-thirds to four-fifths of those that exist in the blood. Toxic reactions apparently are rare, and it seems much less likely to cause renal injury than sulfathiazole or sulfapyridine.

One of the first large scale clinical studies of the new compound was that of Finland and his associates at the Boston City Hospital (*J.A.M.A.*, 116, 2,641, 1941). These workers used sulfadiazine in the treatment of 446 patients with various infections. They found that "it appeared to be highly effective in the treatment of the following diseases: pneumococcal, staphylococcal, and streptococcal pneumonias, meningococcal infections, acute infections of the upper respiratory tract including sinusitis; erysipelas; acute infections of the urinary tract, particularly those associated with the *Escherichia coli* bacillus, and acute gonorrhoeal arthritis." Like other sulfonamides it was found to be relatively ineffective in chronic infections of the urinary tract, chronic gonococcal arthritis, subacute bacterial endocarditis, and chronic pulmonary infections. Finland states that "the results in the cases of pneumococcal pneumonia treated with sulfadiazine are comparable in every respect with the best results obtained in this clinic with the use of either sulfapyridine or sulfathiazole. In all the other conditions the numbers of cases are too few to warrant definite conclusions or comparisons. In general, sulfadiazine appeared to be as effective as sulfapyridine or sulfathiazole in every condition in which it was used." Toxic effects from sulfadiazine were mild and infrequent. Its use in a number of patients with renal or hepatic disease caused no further impairment of the function of these organs. In a group of 66 patients who had received both sulfathiazole and sulfadiazine, toxic effects from sulfathiazole were three times as frequent as they were during sulfadiazine therapy.

Although further experiments with the use of sulfadiazine will be required for an accurate estimate of its advantages and limitations, it seems clear that a compound has been found which in many respects seems superior to the sulfonamides which have previously been available.

As valuable as the sulfonamides have proved to be, their effectiveness is largely limited to the treat-

ment of diffuse or spreading infections because necrotic tissue associated with suppuration has been found to contain in large amounts substances which counteract their action. These "sulfonamide inhibitors" are constantly found in pus and in dead tissue in such concentrations as to make the treatment of abscess, carbuncle, empyema, and so on with sulfonamides unsatisfactory. Preliminary experiments with two new substances entirely unrelated to the sulfonamides suggest that they may not have this disadvantage, and may therefore be effective in situations in which little could be expected from the use of sulfanilamide derivatives. It should be pointed out, however, that at the present time the use of these two new substances, penicillin and gramicidin, is still in the experimental stage.

Penicillin, an active principal of unknown composition of the mould "*penicillium notatum*," was first described by Fleming in England in 1929. In 1940 a group of workers at Oxford headed by Chain showed that this substance had potent chemotherapeutic properties. It was not until 1941 however that the Oxford group succeeded in the large-scale production and purification of this material. Their recent report (Abraham et al, *Lancet*, 2, 177, 1941) describes a method by which optimum yields of potent material may be obtained from cultures of the mould, and how it may be purified and preserved. The process, while tedious and complicated (for instance about one hundred liters of medium are required to produce one gram of penicillin, the amount which may be used in one day in the treatment of a severe infection) still seems adaptable for commercial production of the material. It is obvious, however, that until the chemical structure of the principal can be determined and its synthesis achieved, penicillin will not be available in sufficient quantities or at a reasonable enough cost to permit it to be used in such a general manner as are the sulfonamides at the present. Its use will have to be restricted to those cases in which sulfonamide therapy could not be expected to be effective. In vitro experiments of the Oxford workers showed that (1) penicillin, like the sulfonamides, is bacteriostatic not bactericidal; (2) its bacteriostatic action is selective and is particularly manifested against certain gram-positive organisms such as the staphylococcus, streptococcus pyogenes, the anthrax bacillus, and the *welchii* bacillus, organisms which are in general more resistant to sulfonamide therapy than are the gram-negative cocci; (3) its bacteriostatic action is not inhibited by pus, blood, serum, or protein autolysates; (4) in concentrations of 1 to 500-1,000, which are considerably greater than the ones used therapeutically, it had no toxic effects on living cells, and (5) it is destroyed by exposure to highly acid or alkaline reactions.

The amount of penicillin available for clinical trial has been small, but the limited experience of the Oxford group suggests that it is "possible to secure and maintain a bacteriostatic concentration of penicillin in the blood without causing any toxic symptoms." Oral administration is generally unsatisfactory because of the action of the hydrochloric acid of the stomach on the principal. Apparently it may be administered intravenously with safety. In the small series of cases treated a "favourable therapeutic response was obtained in all." Especially interesting was the remarkable amelioration of symptoms in three classical cases of acute staphylococcal pyemia.

Gramicidin is a crystalline substance derived from cultures of an aerobic sporulating bacillus isolated from soil, and it exerts selective bacteriostatic and bactericidal effect against gram-positive microor-

ganisms. Its development has been largely due to the work of Dr. Rene J. Dubos of the Rockefeller Institute for Medical Research whose investigations began in 1939. Recently, Dr. Dubos found that an alcohol-soluble, water-insoluble fraction derived from cultures of bacilli isolated not only from the soil but from sewage, manure, and cheese, yield a fraction, tyrothricin, which is bactericidal for most gram-positive and gram-negative microbial species (*Jour. Exper. Med.*, 73, 629, 1941). Gramicidin is one of the two different crystalline products which have been separated from tyrothricin. The other substance, tyrocidine, while bactericidal in vitro for both gram-positive and gram-negative species, behaves like a protoplasmic poison and seemingly will have little therapeutic importance, since like other antiseptics it loses much of its activity in the presence of animal tissues. Gramicidin on the contrary has been found to be effective against gram-positive microorganisms in vivo as well as in vitro. In experimental pneumococcal and streptococcal infections in mice gramicidin exerts a pronounced protective action. When applied locally at the site of the infected area gramicidin exhibits a definite activity against these gram-negative organisms; but interestingly enough it is almost completely inactive in systemic infection when injected intravenously. No clinical reports of its use are available at the present, and no estimate of its usefulness as a therapeutic agent in man can as yet be made. As a result of his work leading to the development of gramicidin, Dr. Dubos was a joint recipient of the 1941 E. Mead Johnson Awards of the American Academy of Pediatrics.

A New Influenza Vaccine. An advance described by the editors of the *Journal of the American Medical Association* (116, 143, 1941) as "one of the most promising practical leads in research of recent decades," was the development of a new complex influenza vaccine by Horsfall and Lennette of the Rockefeller Foundation which apparently stimulates the development of multivalent immunity. The discovery of this new vaccine came about by accident. Several of a group of ferrets which had been inoculated with one of the strains of viruses responsible for human influenza developed concurrently another virus disease, ferret distemper. In order to prevent the spread of distemper among the stock animals a formalized vaccine was prepared from the lungs and spleen of these ferrets and injected subcutaneously into the other normal ferrets of the colony. When subsequently attempts were made to inoculate the vaccinated ferrets with three antigenically different strains of the human influenza virus, Horsfall and Lennette were surprised to find that none of the animals developed influenza and this in spite of the fact that the second inoculation with influenza virus had been with entirely different strains. In other words, the combination of ferret distemper and experimental influenza resulting from inoculation with one strain of human influenza virus had apparently resulted in immunity against at least three entirely different strains of influenza virus. Later Horsfall and Lennette were able to reproduce this multivalent vaccine and found that it protected ferrets not only against canine distemper but against all the strains of human influenza virus which they were able to test. The development of multivalent immunity is difficult of explanation according to current immunologic theory. Horsfall and Lennette conclude that "under the influence of concurrent distemper infection the human influenza virus undergoes antigenic alterations which render it less virulent, less highly specific, and more broadly antigenic than the

original virus." Clinical trials of the new complex vaccine have been reported during the past year (Horsfall, Lennette, Rickard, and Hirst, *Public Health Reports*, 56, 1,863, 1941).

In 1940 7,907 volunteers in 15 institutions in Florida and Alabama were given single subcutaneous injections of a complex nonviable Influenza A and canine distemper vaccine; 9,688 inmates of the same institutions were not vaccinated. Four months later an epidemic of influenza occurred in ten of the eleven institutions. In all, 1,450 cases of influenza were observed. By a study of serum obtained from patients during the convalescent period it was possible to determine fairly accurately the number of cases in which Influenza A virus was the etiologic agent. The incidence of Influenza A was found to be 50 per cent lower among the vaccinated groups than among the unvaccinated controls. However, the incidence of influenza due to virus strains other than that of Influenza A was not significantly different in the two groups. The authors believe that since the complex vaccine used was nonviable and contained only inactivated virus the protection against Influenza A afforded by vaccination was due to an increased antibody level rather than stimulation of other immune responses.

Similar results with the complex nonviable vaccine were obtained in California by Martin and Eton (*Proc. Soc. Exper. Biology and Medicine*, 47, 405, 1941). However in the epidemic studied in California equally effective results were obtained with living vaccine prepared by growing Influenza A virus on minced chick embryos suspended in saline solution. While routine vaccination against influenza in general medical practice seems not yet justified, results of these studies are encouraging and suggest that the prevention of influenza may be possible in the not distant future.

The Virus of Acute Pneumonitis. Weir and Horsfall, of the International Health Laboratories of New York, have reported the isolation and identification of a virus which is apparently the causative agent of "virus pneumonia" or "acute pneumonitis." This is an epidemic disease which is being recognized with increasing frequency in the United States. It was first described by Bowen in 1935 as "acute influenza pneumonitis," and since that time has been described by numerous other investigators under such names as "acute pneumonitis," "bronchopneumonia of undetermined etiology," "atypical pneumonia," and so on. Characteristic clinical features which distinguish it from pneumococcus pneumonia are its great contagiousness, its tendency to involve first the upper respiratory tract with the production of influenza-like symptoms, the bizarre character of the pulmonary consolidation, and a mild course usually terminating with recovery in from four to eight days. Frequently there is an associated leukopenia, and in most instances pneumococci cannot be found in the sputum.

After vainly attempting to infect the usual experimental animals by intranasal instillation of throat washings from typical clinical cases, Weir and Horsfall hit upon the idea of trying such installations in the mongoose. Importation of this animal into the United States is prohibited, so that in order to carry out this study it was necessary to send preserved throat washings from patients in New York to Kingston, Jamaica, where at the British Tuberculosis Research Station the actual experimental studies were carried out. It was found that more than two-thirds of the inoculated animals developed lesions of the lungs similar in pathologic detail to those observed in "acute pneumonitis" in man. These lesions were found in almost all cases

to be bacteriologically sterile, but serial passage was possible to normal mongooses and filtration studies showed that the etiologic agent passed readily through a Berkefeld filter. Furthermore, the virus could be grown on the chorioallantoic membrane of the chick embryo, and serial passage to other chick embryos was readily accomplished. It may be mentioned that the propagation of viruses on the chorioallantoic membrane of the developing chick embryo, a technique developed by Dr. Goodpasture of the Vanderbilt University School of Medicine, has proved to be an extremely important method of study in virus disease, since in many instances it permits the "culture" of viruses in a manner entirely comparable to the culture of bacteria on usual laboratory media.

Weir and Horsfall also found that neutralizing antibodies which were specifically virucidal could be demonstrated in the serum of convalescing animals. Neutralizing antibodies against the virus also may be found in the serum of patients convalescing from "acute pneumonitis." Cross neutralizing tests indicate that the virus of "acute pneumonitis" differs from the influenza virus and, as a matter of fact, from all the viruses available for cross immunization tests (Weir and Horsfall, *Jour. Exper. Med.*, 72, 595, 1940).

Since "virus pneumonia" is an apparently common disease, which in many districts may assume epidemic or even pandemic proportions, the discovery of its etiologic agent seems to be an advance of considerable importance.

The Treatment of Early Syphilis. Padget, of the Syphilis Division of the Medical Clinic of Johns Hopkins Hospital and University, reported the long term results in a group of patients with early syphilis treated by modern methods and observed for a mean period of 10.8 years. (*J.A.M.A.*, 116, 7, 1941) His study is significant because it is the first in which a large group of patients (551) have been followed for so long a time. He found that of this group 65.7 per cent could be classified as "cured" That is to say, no clinical manifestations of syphilis could be found and serological tests were negative. Another group comprising 14.9 per cent were well clinically, but still gave positive serological tests for syphilis. In 12.3 per cent of the total group, syphilis of the nervous system was present, and in a final group of 7.1 per cent other late manifestations of the disease were found. Of especial significance was the observation that all patients who satisfied the criteria of "cure" when examined after a period of five years, continued to do so when examined ten or more years after the initiation of treatment. This indicates, of course, that in early syphilis a five-year "cure" in all likelihood represents a permanent "cure," and it permits some relaxation of the post-treatment follow-up after the fifth year of observation. Padget found, as had previous workers who had studied smaller groups of patients, that white women achieved the greatest percentage of "cures," 76.1 per cent, and Negro men the least, 58.3 per cent, with the other two race-sex divisions between (63.6 per cent and 68.5 per cent for white men and Negro women respectively). Also, as had been previously observed, among those who did not achieve "cure," neurosyphilis was two and one-half times as frequent among the whites, while cardiovascular syphilis was more common among Negroes. He found further that in the entire group the highest percentage of "cure," 82 per cent, was achieved in patients in whom treatment had been begun in the so-called seronegative primary stage, that is to say, after the primary lesion had appeared but before blood tests were positive.

Interestingly enough the smallest percentage of "cure," 55 per cent, was found in the groups in which treatment had been initiated in the seropositive primary stage. The results of "continuous" treatment, weekly injections of an arsphenamine in courses alternating with courses of weekly injections of an insoluble bismuth compound or daily injections with mercury, were greatly superior to the results from any other plan of treatment. Furthermore, the percentage of "cure" was directly proportional to the number of doses of arsphenamine administered during the first two years and inversely proportional to the time-span during which the injections were given. The results of irregular treatment were so inferior as "strongly to suggest its complete uselessness, especially after the first few injections."

Padget's study gives statistical proof of the efficacy of the present-day methods of treatment of syphilis and confirms previous opinions derived from the study of smaller groups of patients over a shorter period of time.

Coronary Circulation. Because of the recognition of the increasing importance of disease of the coronary arteries, vessels which supply the heart muscle itself with blood, as a cause of serious heart damage resulting in invalidism or death, any study which throws new light upon the relation of clinical symptoms of cardiac circulatory insufficiency and actual anatomical changes in the coronary vessels is of interest. Such a study was that of Blumgart, Schlesinger and Zoll of the Beth Israel Hospital in Boston (*J.A.M.A.*, 116; 91, 1941). In the hearts removed in a consecutive series of 335 necropsies, these workers made careful studies of the patency of the coronary tree by simultaneous injections of the right and left coronary arteries with a colored radiopaque solution. With the heart unrolled so that all the coronary arteries lay in one plane, x-ray films were made. This was followed by a complete dissection of the arteries and by histologic examination of representative sections. The anatomical results were then compared with the clinical signs and symptoms which had been accurately recorded during life.

In normal hearts they found that anastomoses between the right and left coronary systems large enough to be of any functional significance were usually absent. In some long standing obstructive arterial lesions, however, an adequate bypass from one coronary system to the other could be demonstrated, and it was in this type of case that significant damage of the myocardium might be absent. Also clinical symptoms suggesting myocardial damage frequently were not present. However, in every patient suffering primarily from angina pectoris without valvular disease of the heart or high blood pressure, old complete occlusion of one major coronary artery was invariably found. In many cases more than one major occlusion could be demonstrated. The clinical syndrome, usually called "coronary occlusion" (the common "heart attack" of the laity) consisting of prolonged, severe chest pain, falling blood pressure, pallor, fever, and so on, in reality always signified myocardial infarction, that is, actual death of a part of the heart wall. Prolonged attacks of cardiac pain unattended by signs of myocardial infarction are more accurately described, they said, as attacks of coronary failure. Finally they pointed out "the absolute necessity for immediate and complete bed rest, sedation, reduction of excessively high cardiac rates, and other measures designed to reduce the work of the heart in the presence of prolonged cardiac pain, is emphasized as a means of limiting the extent of myo-

cardial necrosis or even preventing its development. Such a regimen also affords an opportunity for the development of a more adequate collateral circulation.

Prophylaxis of Pulmonary Embolism. Pulmonary embolism, blockage of the pulmonary artery by blood clot, is a not uncommon vascular accident which may have serious or even fatal consequences. Such an embolism commonly results from the breaking off and transport to the lungs of clots which have formed in the periphery of the venous system. Embolism may occur after operative procedures, may be associated with an obvious phlebitis of the legs, or may occur in patients confined to bed who have neither been operated on nor have evident disease of the veins of the extremities. When not associated with recognized thrombophlebitis of the leg its occurrence is dramatic and unexpected and in many instances, where the embolism is massive, sudden death results. The abrupt appearance of severe pain in the chest with dyspnea, cyanosis, and collapse, followed shortly by exitus, in patients whose previous postoperative course had been satisfactory, is a tragedy only too well known to surgeons. In the past it had been supposed that such calamities were due to the lodgment in the lung of large clots whose source was in the great veins of the pelvis, and because of the inaccessibility of these veins it was supposed that no satisfactory methods for the prevention of such an accident were available. In the light of recent studies the common source of pulmonary embolism is indicated to be, not the pelvic veins, but rather the venous plexuses of the calf of the leg, that the presence of clotting in these veins may be detected by appropriate clinical and x-ray investigations, and that the pathway which such clots must traverse in order to arrive in the lungs may be blocked by ligation and division of the saphenous vein in the groin, such a pessimistic viewpoint is no longer tenable. Current ideas concerning the prophylaxis of pulmonary embolism are largely based on the work of three groups of Boston surgeons, Homans of the Peter Brent Brigham Hospital, Welch and Faxon of the Massachusetts General Hospital, and Sears and Fine of the Beth Israel Hospital.

The paper of Welch and Faxon presented at the Annual Session of the American Medical Association may be briefly referred to (*J.A.M.A.*, 117, 1,502, 1941). Welch and Faxon point out that no generally acceptable method for the prevention of phlebitis is known at the present, although it is possible that the use of heparin or some other anticoagulant may prove to be of great value. The diagnosis of thrombophlebitis of the deep veins of the leg may usually be made clinically in the absence of gross changes by the demonstration of slight swelling of one leg, slight tenderness in the calf, or pain in the calf on forcible dorsiflexion of the ankle (Homans' Sign). In the cases of pulmonary embolism in which the physical findings are negative, demonstration of thrombophlebitis in one or the other leg may be made by x-ray films of the extremity made after the injection of an opaque dye into one of the ankle veins. This is of importance, since it enables the surgeon to determine from which leg the embolus has come and permits him to direct his operative efforts to the proper group of veins. In the cases studied in the Massachusetts General Hospital pulmonary embolism occurred in one patient in three who had a detectable deep phlebitis. In one case out of twenty-five the embolism was fatal. Further, it is the belief of Welch and Faxon that 95 per cent of all fatal emboli arise from the veins of the lower extremities.

Another finding of interest was that fatal pulmonary emboli are extremely rare under the age of fifty, but that in the older age groups the incidence rises sharply. Seven per cent of the patients between fifty and seventy years of age who had a deep phlebitis and 20 per cent of those over seventy had fatal emboli. It is their opinion then that the detection of deep phlebitis in a patient over fifty justifies the division of the femoral vein as a prophylactic measure against embolism. In younger patients they believe that deep phlebitis may be treated conservatively, but if minor pulmonary embolism should occur femoral division is again indicated. It seems reasonable to suppose that if careful attention to the state of the veins of the extremity in postoperative patients, as well as in other patients confined to bed for a long time (in whom clotting is apt to occur), the presence of thrombophlebitis may be more frequently detected and with its recognition and proper treatment, the incidence of death from pulmonary embolism may be significantly decreased.

Advances in Surgery. A new technic for the parenteral administration of blood and other fluids which gives promise of being of considerable value in a variety of situations, is that devised by Tocantins and O'Neil of the Jefferson Medical College in Philadelphia. In experimental studies they found that when mercury is injected into the marrow cavity of the sternum or into the tibia and humerus, the metal could be seen by fluoroscopy to escape through the emissary veins into the general venous circulation. Also bacteria injected into the bone marrow of guinea-pigs could be found in various organs almost immediately after injection. With this proof of the close anatomical relationship between the vessels of the bone marrow and those of the general circulation, they felt justified in attempting the intramedullary injection of fluids in man. This is usually accomplished by the insertion of a short needle into the sternum. It was found that blood as well as other solutions commonly used intravenously (glucose, saline, and so on) could be administered in this fashion rapidly and with safety. No local or constitutional reactions, either immediate or delayed, were observed. This route of fluid administration is indicated whenever a rapid absorption of substances is desired and the intravenous route is not available. Difficulty in the intravenous administration of fluids frequently occurs in adult patients who are very obese, in those whose subcutaneous tissues are edematous, in the presence of low blood pressure, shock, or hemorrhage, in the presence of extensive cutaneous burns, and after repeated venipunctures have caused thrombosis of the available veins (*Surgery, Gynecology, and Obstetrics*, 73; 281, 1941). It is, however, especially in infants and in young children with poorly developed venous systems that the method would seem to have its chief usefulness. In such patients intravenous therapy using the peripheral veins is always difficult and sometimes impossible. Alternate routes, the superior longitudinal sinus within the cranium or the peritoneal cavity, involve greater risk and for a number of other reasons may be less satisfactory. Tocantins, O'Neil, and Jones report that the administration of blood and physiological solution of sodium chloride through the marrow of the tibia or femur was carried out in nine children with no ill effects, and since in each instance intravenous infusion was urgent but impossible, the intramedullary injection was of great value. (*J.A.M.A.*, 117; 1,229, 1941).

The value of heparin, an anticoagulant previously described in the *YEAR BOOK*, has become well

recognized. Murray of the Toronto group which has been largely responsible for the preparation of a purified product which may be safely used therapeutically, has reported his rather extensive experiences with the substance (*Surgery, Gynecology, and Obstetrics*, 72; 340, 1941). He considers the administration of heparin indicated in all types of surgical procedures involving the blood vessels. This includes the suture of arteries, the grafting of segments of veins to replace arterial defects, the removal of emboli from arteries, and so on. He also states that its use is of value in the treatment of thrombophlebitis in that the course of the disease may be shortened and the disabling aftereffects to some extent prevented. The disadvantages of heparin therapy are its excessive cost, the fact that it must be administered intravenously and preferably by means of a constant infusion, and the necessity for frequent determinations of the clotting time in order that it may be maintained at the proper level of elevation. A new anticoagulant, a derivative of coumarin, which is apparently the substance in spoiled sweet clover responsible for a bleeding tendency in cattle after its ingestion, has been isolated by Link and his coworkers of Wisconsin (*Proc. Staff Meeting of the Mayo Clinic*, 16; 388, 1941). Unlike heparin, it seems to be effective when taken by mouth and produces an inhibition of clotting over a period of several days. In animal experiments it has been administered without any apparent ill effects; since it is effective orally and since presumably it could be prepared inexpensively, its use may not be attended by some of the disadvantages associated with heparin therapy. As yet, whether or not it may be safely administered to man has not been determined.

At the annual meeting of the American Surgical Association, held this year at White Sulphur Springs, W.Va., there were two interesting symposia. The first was concerned with peptic ulcer. Walters and Cleveland of the Mayo Clinic reported that about 90 per cent of patients who had been treated by partial gastrectomy for bleeding peptic ulcer obtained satisfactory results, that is, there was no further hemorrhage and relief was obtained from the ulcer type of distress. Allen and Welch, of the Massachusetts General Hospital, presented an interesting paper in which it was pointed out that gastric ulcer cannot be distinguished from cancer in a high percentage of cases and that, fundamentally, it is therefore a surgical lesion whereas duodenal ulcer, except for its complications, is essentially a medical disturbance. Gastric carcinomas that simulate gastric ulcer, they said, comprised an especially favorable group as regards cure. The second symposium concerned cancer of the pancreas and contained papers by Hunt of Los Angeles, Schnedorf and Orr of Kansas City, and Whipple of New York. In these there was expressed a growing conviction that in spite of the difficulties involved, attempts at excision of such neoplasms is frequently justifiable. This is especially true since the tumors frequently are slow growing and death the result of obstruction of the bile ducts rather than of metastasis. Furthermore the results of palliative operations designed to shunt the bile around by obstructed area are rather unsatisfactory.

Another interesting paper given at the same meeting was that of Cope of the Massachusetts General Hospital who reported experiences with operations for hyperparathyroidism with which condition they have had a greater experience than any other clinic. They have operated upon 60 proven cases of hyperparathyroidism, in 58 of

which the diagnosis was proved at operation. In 54 instances the disease was due to an adenoma of the parathyroid glands (in four cases two adenomata were present). In six cases the increased parathyroid secretory activity was due to hyperplasia of the parathyroids and not to neoplasm. It is of great interest that of the 58 adenomata 16 were found within the thorax, eleven in the anterior mediastinum, and five were found within the posterior mediastinum.

For cooperative medicine, see CONSUMERS' COOPERATIVES. For brain operations and mental diseases, see PSYCHIATRY. For x-rays, see ELECTRICAL INDUSTRIES. See also ANTHROPOLOGY; BIOLOGICAL CHEMISTRY; CHILDREN'S BUREAU; NEW ZEALAND under *History*; PHILANTHROPY, PUBLIC HEALTH SERVICE; ROCKEFELLER FOUNDATION; VETERINARY MEDICINE; VITAL STATISTICS.

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H. WALTON COCHRAN.

MELLON INSTITUTE. The aim of Mellon Institute is the creation of new knowledge by scientific investigation, in accordance with the institution's definite fellowship system. According to this procedure the researches are restricted to major problems of the pure and applied sciences and particularly chemistry—problems that require protracted periods of time for solution by specialists. The Institute was founded by Andrew W. Mellon and Richard B. Mellon in 1913 and is located at 4400 Fifth Avenue, Pittsburgh, Pa.

The industrial research of the Institute is organized on a contract basis, the problem being set by a person, firm, or association interested in its solution, the scientific worker being found and engaged by the Institute, and an industrial fellowship being assigned for a period of at least a year. Each holder of an industrial fellowship is given broad facilities for accomplishing the research entrusted to him and all results belong exclusively to the donor of the fellowship. Only one investigation is conducted on a specific subject at any one time and hence there is no duplication of the research activities of the fellowships in operation. At present there are 95 of these industrial fellowships, which employ 300 scientists and engineers. The projects range from steel and concrete to synthetic organic chemicals, new plastics and textiles, and improvements in foods and other essential commodities.

The Institute's department of research in pure chemistry is conducting on a broad scale investigations of cinchona alkaloids and their derivatives in relation to the chemotherapy of pneumonia. During the fiscal year 1940-41 the Institute expended \$1,258,866 in carrying on pure and applied research. See CHEMISTRY, PURE.

The board of trustees is constituted of John G. Bowman, President; Edward R. Weidlein, Vice-President; Henry A. Phillips, Treasurer; Paul Mellon; Richard K. Mellon; and Alan M. Scaife. Edward R. Weidlein is Director.

MEMEL. A German territory on the east coast of the Baltic, created an autonomous district under Lithuanian sovereignty by the Memel Statute of May 8, 1924, and ceded by Lithuania to Germany on Mar. 23, 1939 (see *YEAR BOOK* for 1939, pp. 473-474). Area, 1,099 square miles; population on Jan. 1, 1940, 153,793. See *GERMANY*.

MENCHIANG (MENG CHIANG). See the article on *MONGOLIA*.

MENNONITES. A religious group founded in Switzerland in 1525 in protest against ecclesiastical rule and rigid liturgy. In the United States the Mennonites first settled at Germantown, Pa., in 1683, ultimately dividing into 17 bodies. For statistics, see *RELIGIOUS ORGANIZATIONS*.

MENTAL DISEASES. See *CHILDREN'S BUREAU*; *PSYCHIATRY*; *PSYCHOLOGY*.

MERCHANT MARINE. See *SHIPBUILDING*; *SHIPPING*; *WORLD WAR*.

MERCURY. The production of mercury in the United States in 1941 was about 43,500 flasks (of 76 lb.) some 5,720 more than were produced in 1940 (37,777). This was the highest production mark in 60 years, and the price (\$162 per flask in January, 1941, \$215 in December) the highest since World War I. Domestic consumption, January-October, 1941, was 37,000 flasks, compared to 26,600 flasks for all of 1940.

The need for mercury in the manufacture of munitions placed it among the strategic metals even in 1940, and it was put under export control in July of that year. Early in 1941 the U.S. Navy bought huge amounts of mercuric oxide for antifouling paint. Thirty-nine hundred flasks were consumed in three months. Four mines which had produced 10 per cent of the 1940 total were exhausted by March, 1941. The U.S. Bureau of Mines reported (March, 1941) a reserve of 92,000 flasks: 56,000 in California, 31,000 in Oregon. And in June some very rich strikes in certain areas caused a spurt of increased production. But by October the munitions industry was making such extraordinary demands that it was soon known that the output of domestic mines would not be enough to support the war effort. Imports had been falling off for two years and in 1941 there were no imports of mercury except from Mexico. To protect the nation's vital needs the United States made an agreement with the Mexican government, July, 1941, whereby the United States was to buy the surplus production of certain strategic materials, including Mexican mercury (which had been going to Japan until that date) and whereby Mexico would thenceforth sell only to nations of the Western Hemisphere. Imports and exports of mercury after October, 1941, are not to be made public. The War Production Board ordered the use of mercury for all civilian purposes cut over 50 per cent on Jan. 26, 1942.

Mining experts of the U.S. Bureau of Mines discovered during the year new deposits which can be developed to a point of valuable production if needed. No government action was taken to stabilize prices. See *MINES, BUREAU OF*.

MERIT SYSTEM. See *CIVIL SERVICE COMMISSION*; *SOCIAL SECURITY BOARD*; articles on States under *Legislation*.

MESOPOTAMIA. See *IRAQ*.

METALS. See topics listed under *MINERALS AND METALS*. For *METALS RESERVE COMPANY* see *TIN*; also, *YEAR BOOK* for 1940, p. 649.

METEOROLOGY. Modern statistical machines are helping meteorologists to use records of observations with a high degree of efficiency. Perhaps 50,000 meteorological observations are recorded daily in the world; it can readily be seen that several million are recorded annually. The task of summarizing these observations is a great one, but is being made somewhat easier by the use of machines. Jameson published during the year a paper in which he gives the results of a summary of 360,000 observations made on the oceans over the world. He did not cover the entire oceanic surface, but used only that portion situated between 20 degrees north latitude and 20 degrees south latitude, and he used only those observations made during the years 1920 to 1938, inclusive. The object of Jameson's study, in which the use of machines played so important a part, was to investigate and ascertain the diurnal variation of barometric pressure in the tropical seas. He found the 12-hour oscillation between 10 degrees north and 10 degrees south latitude to be 1.13 millibars (approximately 0.04 inch); the oscillation between 10 and 20 degrees (both north and south) was, of course, slightly less: 1.04 millibars. Jameson's values are about ten per cent less than Simpson obtained in 1918 using land-station records. Jameson's work represents a real contribution to meteorology, for convection has been regarded as a cause of the diurnal pressure oscillation in the atmosphere, and as convection is so much less over water than over land it seems that convection should be discarded as the main cause.

The Civil Aeronautics Authority has published a summary of the wind directions associated with low visibility. Statistical machines were of great importance in this work; 13,000,000 regular hourly airway observations were surveyed and all cases of visibility one mile or less were extracted, together with the cause of the low visibility (smoke, fog, snow, etc.), the wind direction and velocity, and other information. These data were compiled for 182 stations in the United States for the five-year period 1934-38. Surface wind-roses, compiled without regard to visibility, had been available for several years and had enabled airport engineers to design airports and plan runway directions in accordance with the prevailing winds at each location. With the advent of reliable instrument landing equipment, however, it had become necessary to determine the direction and velocity of prevailing winds during conditions of restricted visibility, since these are not necessarily in agreement with surface winds under other conditions of weather. By use of this type of information, which has now been compiled, it is possible to plan new airport runways, runway extensions, instrument landing systems, and other air navigation facilities so that they may be used to the best advantage for bad weather approaches and landings. A wind-rose has been constructed for each of the 182 stations and each wind-rose shows the percentage frequency of each wind direction, and a corresponding table shows the velocity of the wind and the cause of the low visibility.

Five-day forecasts, commenced in 1940 by the Weather Bureau, were continued during 1941. One of the basic discoveries made in this connection was the intensity of the prevailing west-wind circulation in middle latitudes. A measure for the intensity of this 5-day circulation was found in the difference of the mean sea-level pressure at 35 degrees and 55 degrees north taken around the globe. This index has been found to vary about 20 millibars, one extreme is when the pressure is

below normal and indicates east winds in the middle latitudes, and the other extreme is when the pressure is above normal and indicates west winds in the middle latitudes. These fluctuations are thought to be due to the intermittent inflow of true equatorial air into the westerlies of middle latitudes. According to this hypothesis a current of true equatorial air is occasionally injected into middle latitudes; there it interacts with the polar air along the polar front, and because of the enormous amounts of latent heat available, the resulting intense vertical and meridional circulation over the polar front leads to a marked strengthening of the westerlies. This in turn leads to a build-up of the subtropical high-pressure belt, and in this way the equatorial air is shut off from access to higher latitudes. As the westerlies gradually are dissipated the general circulation breaks down into smaller cells and there is renewed opportunity for the air to flow northward. Periods of strong southwest circulation are characterized by intense and large cyclonic centers of action in the North Pacific and North Atlantic, while a weak west circulation is normally accompanied by a breakdown of each of these lows into smaller low pressure centers. For forecasting purposes it is important to establish the relationship between the number, position, and character of the frontal systems associated with periods of strong and weak circulation, and to determine the conditions of weather and temperature characteristic of these different circulation types. In making the forecasts prognostic pressure-charts for sea level and 3 km. elevation are made, once these two pressure distributions have been predicted, the expected temperature anomaly distribution may be forecast, since these two pressures together determine the mean temperature of the vertical air column. While the forecasting of temperature is relatively easy by the above process, the relationship between the distribution of pressure and the precipitation anomaly is not simple and hence its forecasting is not so successful. Efforts are being made to forecast the precipitation by finding the relation between the horizontal convergence of air currents and vorticity and vertical motion and the rainfall.

The issuance of five-day forecasts to the public was suspended in December on account of the war.

Even before the entrance of the United States into the conflict reports in meteorology had suffered due to the war. Weather reports are desired by the air forces of all the warring powers and for this reason each nation attempts to prevent its weather reports from reaching the enemy. Precautions are taken to prevent monthly weather summaries from falling into the hands of the enemy, for fear that some secret method of long-range weather forecasting that might help in the timing of campaigns has been or will be developed. Along with the suppression of the free flow of daily, weekly, and monthly reports there is also a suppression of climatic summaries and perhaps of original contributions to knowledge. However, the actual publication of data and contributions is not so much suppressed as the circulation of that which is published. In December, the U.S. Weather Bureau stopped all radio broadcasts of weather information and suspended the publication of weather maps in newspapers. Other similar steps were taken to prevent weather information from reaching an enemy.

Schell has attempted to apply the methods of Walker to the long range forecasting of the winter precipitation in Montana. He has pointed out that there is an apparent, though as yet unexplained,

relation between the pressure in the western Pacific and the winter precipitation of Idaho, Wyoming, and Montana in the United States and Manitoba, Saskatchewan, and Alberta in Canada. Schell's results are not perfect, but they are very much better than could be obtained by pure chance and are one of the notable advances in long-range forecasting.

New York University commenced measurements of the amount of ozone in the atmosphere at the beginning of the year. Observations are made daily by an instrument using wave lengths 3,110, 3,300, and 4,450 Angstroms, regardless of whether the day is clear or cloudy.

See ASTRONOMY; EARTHQUAKES; FLOODS; HURRICANES.

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RICHMOND T. ZOCH.

METEORS AND METEORITES. See ASTRONOMY.

METHODIST CHURCH, THE. The processes necessary to the practical organic unification of the Methodist Episcopal Church, Methodist Episcopal Church, South, and Methodist Protestant Church, effected constitutionally in May, 1939, continued through 1941 to a stage of near completion. Remaining undone were only such matters as changes of charter and the legal holdovers involved in the transition.

Unification in the publishing enterprises of the church involved the concentration of printing in three cities: Nashville, Cincinnati, and Chicago. Distribution is through 13 branch houses. The new official Christian Advocate, begun Jan. 1, 1941, under the editorship of Dr. Roy L. Smith and published in Chicago, quickly attained a weekly circulation of nearly 300,000, the largest on record for any Protestant periodical. The consolidation of 55 religious educational periodicals, previously published by the merging denominations, into a new series of 24 closely integrated weeklies, monthlies, and quarterlies was accomplished prior to October 1 when the new series began, with a total print order of 4,540,000 copies. The Publishing House issued during the year 1,500,000 books and 130,000,000 periodicals. Sixty book titles were announced during the year by the new Abingdon-Cokesbury Press. An appropriation of \$200,000 of the produce of the Publishing House was voted for distribution to the Annual Conferences to supplement retired ministers' funds. During the year there was started a monthly periodical for Methodist college students, *motive*, edited by Dr. Harold A. Ehrensperger and published in Nashville.

A renovation and modernization of the fifty-year old New York House at 150 Fifth Avenue, involving a quarter of a million dollars, was completed in November. A new six-story building to house the Publishing House in Nashville was authorized to cost approximately \$700,000.

Changes in the episcopal leadership of the Church included the deaths of three retired Bishops—Horace M. Dubose, Charles L. Mead, and Warren Aiken Candler. Three Bishops were elected by the Eastern Asia Central Conference in April, 1941, their authority being limited to this territory: Rev. Z. T. Kaung, pastor of the Moore Memorial Methodist Church in Shanghai, who ten years previously baptized Generalissimo Chiang Kai-Shek; Rev. W. Y. Chen, secretary of the National Christian Council of China, and the Rev. Carleton Lacy,

a long-time missionary. The Council of Bishops at its annual meeting held at Sea Island, Ga., in December, elected as president of the Council Bishop Ernest G. Richardson of Philadelphia; vice president, Bishop W. W. Peele of Richmond; secretary, Bishop G. Bromley Oxnam of Boston.

War needs were answered by the successful promotion of a "Day of Compassion" offering taken simultaneously in Methodist churches March 2. Proceeds (\$960,000) were divided: one-half to overseas relief, one-fourth to aid British Methodism, one-fourth for camp service. An Overseas Relief organization created in 1940 by the General Conference, continues and with the above amounts, plus funds raised before and since, has contributed \$904,904 for overseas war relief work. The camp service is administered by a Commission headed by Bishop Adna Wright Leonard of Washington, D.C., Dr. Jacob Payton having been made its executive. Bishop Leonard was also made head of the Methodist Commission on Chaplains.

Missionaries in Japan and Korea were recalled by action of mission board executives in February, some to this country, others being assigned to new fields. Strategic war-caused readjustments have been frequent in the total program but no significant changes in personnel or financial totals can be recorded. Soochow University and Lewis Memorial church in Chungking were almost completely destroyed in bombings. Seventeen young men and women were commissioned as foreign missionaries, two as home missionaries, and five as deaconesses, in December.

The reorganization of the young people of the denomination into the Methodist Youth Fellowship was effected in August at Baldwin, Kans., through the calling of a delegated national conference. J. Kempton Jones, a Duke University student, was made national president. A youth headquarters related to the denomination's Board of Education, was established in Nashville, Tenn., with Dr. Harvey Seifert, the executive secretary. This involves the discontinuance of The Epworth League, the National Council of Methodist Youth, and other youth organizations. The year closed with a four-day student conference held at Urbana, Ill., bringing 1,600 Methodist students from about 300 colleges.

Methodist educational institutions in the United States classify as follows: Universities, 9; graduate Schools of Theology, 10; Colleges, 69; Junior Colleges, 27; Secondary schools, 18; Training schools, 2; Professional schools, 3. Of the 138 institutions, 16 are for Negroes. A survey made this year shows that one member in every 35 of the Methodist church is a college student. The ratio of college students to general population is one to one hundred and twenty-five. The Division of Educational Institutions reported that during 1941 a total of \$9,094,750 was given to Methodist educational institutions.

Latest figures are as follows: Membership in U.S., 7,336,263, elsewhere, 354,770; total, 7,691,033. Effective ministers in U.S., 18,375; elsewhere, 1,835; total, 20,210. Retired and supernumerary, 5,925. Total ministers, 261,135. Number of District Superintendents in U.S., 598; elsewhere, 208; total, 806. Pastoral charges in U.S., 21,247; elsewhere, 2,938; total, 24,185. Congregations in U.S., 42,262; elsewhere, 5,737; total, 47,999. Church Schools in U.S., 39,811; elsewhere, 6,101; total, 45,912. Church School Enrollment in U.S., 5,418,798; elsewhere, 314,071; total, 5,732,869. Baptisms in U.S.; children, 125,861; adults, 126,423; total in U.S., 252,284. Baptisms elsewhere: children, 23,786;

adults, 13,272. Grand total baptisms, 289,343. World Service receipts (year ending May 31, 1941) \$4,539,953. Annual Conference benevolences, \$2,368,433. Women's Society of Christian Service, \$3,260,006. Total regular benevolent giving, \$10,168,292. Paid for ministerial support in U.S., \$36,169,245; elsewhere, \$789,669; total, \$36,958,914. Number of churches in U.S., 41,611; elsewhere, 3,161; total, 44,772. Total estimated value of churches, \$613,831,796. Paid for building and improvements in U.S., \$12,812,397; elsewhere, \$552,207; total, \$13,364,604.

The Church in the United States is divided for administration into six Jurisdictions: The Northeastern, Southeastern, North Central, South Central, and Western are geographical. The Central includes the Negro Conferences of The Methodist Church. One hundred and fourteen Annual Conferences are divided into 31 Episcopal Areas over each of which a Bishop is assigned for residence and supervision. In addition there are 2 Missionary Bishops, 10 Central Conference Bishops, and 19 retired Bishops—a total of 63.

METROPOLITAN MUSEUM OF ART. See ART.

METROPOLITAN OPERA COMPANY. See MUSIC.

MEXICO. A Federal republic of North America, comprising 28 States, 2 Territories, and the Federal District (City of Mexico and 11 surrounding villages). Capital, Mexico, D.F.

Area and Population. Area, 763,944 square miles, population, 19,848,322 (estimated) on June 30, 1940 (16,552,722 at 1930 census). Births in 1939 numbered 801,531, deaths, 444,032, entrances into the country, 182,850, departures, 155,879. The racial division of the population (1930 census) was: Indians, 4,630,880, whites, 2,444,466; mixed race, 9,040,590. The population of the city of Mexico in 1940 was estimated at 1,754,355 (1,234,000 in 1930). Populations of other towns (1930): Guadalajara, 175,539; Monterrey, 132,577; Puebla, 114,793; Mérida, 95,015; San Luis Potosí, 74,003; León, 69,238; Tampico, 68,126; Veracruz, 67,494; Torreón, 66,001; Aguascalientes, 62,244. United States citizens resident in Mexico on Jan. 1, 1941, numbered 13,014.

Defense. Military service in the active army or National Guard is compulsory. As of Nov 1, 1940, there were about 62,500 in the active army, 700 in the air force (with about 70 planes), and 63,680 trained reserves. In addition there was a private militia of workers and peasants, estimated to number about 30,000, with some arms and military training. The navy consisted of 6 escort and 10 coastguard patrol vessels. Defense budget for 1941, 110,000,000 pesos (24 per cent of total expenditures).

Education and Religion. In his message to Congress of Sept. 1, 1940, President Cárdenas said illiteracy had declined from 70 to 45 per cent in the preceding 30 years, and that primary school attendance had increased in the preceding five years from 1,400,000 to 1,800,000. Free secondary education was provided for the first time under the law of Dec. 30, 1939. The Federal appropriation for education in the 1941 budget was 77,850,000 pesos or 16 per cent of the total.

Roman Catholicism is professed by over 90 per cent of the population. The 1917 Constitution established State control of all churches. All foreign priests were expelled in 1926. In 1936 all buildings used for religious purposes were nationalized and the number of native priests permitted to officiate was reduced to about 350. In subsequent years a

number of State governments permitted many churches to reopen.

Production. Agriculture, mining, stock raising, and manufacturing are the chief occupations. The principal crops, with latest production figures in metric tons, are: Corn, 1,976,731 in 1939; cotton, 77,290 in 1941; refined sugar, 325,000 in 1940-41; henequen, 124,973 in 1939; coffee, 50,000 in 1940, 31,023 in 1939; alfalfa, 1,736,473 in 1939; rice, 97,508 in 1939; chickpeas, 55,776 in 1939; linseed, 3,135 in 1940; tobacco, about 33,000,000 lb. in 1941.

Petroleum output in 1940 was 40,350,000 bbl., giving Mexico seventh place among world producers; coal, 547,646 metric tons. Excluding petroleum and coal, the value of mineral production rose from 598,626,000 pesos in 1939 to 645,067,000 pesos in 1940. Gold production in 1940 was 27,468 kilograms; mercury, 401,715 kilograms; and that of other minerals (in metric tons) was: Silver, 2,572; lead, 196,252; zinc, 114,955; copper, 37,600; antimony, 12,267; cadmium, 814; iron, 68,163; white arsenic, 9,266. The 1935 industrial census showed 7,050 industrial establishments with an output of at least 10,000 pesos annually; the total value of their output was 656,853,942 pesos. A total of 130,170 foreign tourists visited Mexico during 1940; their aggregate expenditures were estimated at 61,160,300 pesos.

Foreign Trade. Imports in 1940 were valued at 669,016,462 pesos (629,708,225 in 1939); exports, 960,041,432 (914,389,882 in 1939). The increase in 1940 was due in part to depreciation of the peso (see *Finance*). The United States supplied 78.8 per cent of the 1940 imports (66 in 1939) and took 89.4 per cent of the exports (74.2 in 1939). The principal 1940 exports were (in 1,000 pesos): Gold, refined, 126,811; silver, refined, 121,290; lead, refined, 97,125; copper bars and mattes, 75,730; zinc concentrates, 69,060; crude petroleum, 53,120; gold and silver precipitates, 34,379; zinc, refined, 27,573.

Finance. The average exchange value of the peso declined from \$0 1931 in 1939 to \$0 1852 in 1940. Budget estimates for 1941 balanced at 492,931,000 pesos (448,769,000 in 1940). Actual receipts for the first six months of 1941 were 268,139,300 pesos, or 36,278,000 more than the estimates. As of Aug. 31, 1941, there was a Treasury balance of 20,738,267 pesos. The funded debt on July 1, 1937, was 1,133,994,612 pesos. See *History*.

Transportation. Mexico had about 14,500 miles of railway line in 1941. The principal system is that of the National Railways of Mexico, nationalized in 1937. In 1939 the National Railways carried about 9,254,000 metric tons of freight. The highway mileage was 56,923 at the beginning of 1941. Over 20 air lines provide services between the chief towns and to the other American countries. Veracruz and Tampico are the chief of Mexico's 22 ocean ports. Vessels entering and clearing all ports with cargo in 1939 numbered 13,348 of 6,041,299 tons. See **ROADS AND STREETS**.

Government. The Constitution of 1917, as amended in 1929 and 1933, vests executive power in a President elected by direct popular vote for six years and ineligible for reelection. Legislative power rests with an elective Congress of two houses—a Chamber of Deputies of 171 members chosen for three years and a Senate of 58 members renewed every six years. President in 1941. Gen. Manuel Avila Camacho, who assumed office Dec. 1, 1940. Predominant political power had been exercised since 1928 by the National Revolutionary party, organized by President Plutarco Elias Calles, and

its successor, the Party of the Mexican Revolution (PRM), formed at the direction of President Lázaro Cárdenas in 1938.

HISTORY

The approach of war toward the United States rendered Mexico's northern neighbor a suitor, in a sense, for Mexico's favor. With regard to Mexican exports, many commodities that the United States might otherwise not have needed in excess of its own supply became welcome additions to American production in 1941 and moreover, were worth double their purchase price if American purchase kept them from an enemy nation. Mexico under these conditions enjoyed the readiest possible market for a considerable list of its mineral products—those not sufficiently abundant for the needs of warfare.

President Avila Camacho had taken office only a month before the start of 1941, yet had already set a course definitely to the right of that which his predecessor, President Cárdenas, had followed. This new course brought definite changes during 1941 in the Government's bearings toward the United States, labor, management of industry, communism, the conservative political groups, and doctrinal public education. Mexico drew nearer to the United States in a joint opposition to the threat of the German-Italian-Japanese alliance and in commercial alignment. At home, it broadened the demarcation between government and labor, thus moving farther from communism. The Government drew closer to older and less advanced elements of the Revolutionary party, alienated by the previous administration; it labored to mend governmental management of industry in the conspicuous instances of the railroads and of petroleum, and it took steps to limit the inculcation of socialistic belief in the public schools.

Collaboration with the United States. When the United States adopted in 1940 a policy strongly opposed to Germany and her allies the value of a close understanding with Mexico rose sharply. Mexico's own trade with Europe being largely cut off, she had similarly to turn to the United States in order to recoup the loss. The chief outstanding difference between the two countries had been that over compensation for American interests deprived of property, particularly in petroleum-bearing lands and equipment for working them. Now arose new matters so pressing as to put the old difference somewhat into the background, thus favoring a general rapprochement.

Three steps in particular advanced Mexican-American cooperation in 1941. In April the two countries agreed that each might use the other's facilities (airfields essentially) in the movement of its military forces over the other's territory, thus assuring to the United States easy use of the military overland airway between the Union and the Panama Canal. In July Mexico agreed to limit its exports of strategic and critical materials (mainly nonabundant minerals) to the United States and other destinations in the Western Hemisphere, and the United States agreed to take at current market price, for 18 months, any surplus of such commodities that Mexico might offer. On November 19 the two Governments agreed (1) on further moves to settle amounts of compensation to be paid to owners of expropriated Mexican petroleum properties, (2) signed a convention calling for gradual payment by Mexico of \$40,000,000 to satisfy other American claims; (3) determined to negotiate a reciprocal trade agreement; (4) arranged for the U.S. Treasury's buying Mexican pesos, thus keeping them stable in terms of U.S. money, (5) agreed that the

U.S. Treasury should resume the purchase of new-mined Mexican silver as before 1938, and (6) arranged for the Export-Import Bank (U.S.) to lend the Mexican Government money for road-building.

The reciprocal extension of facilities for military aviation, signed April 1 and promptly ratified by the Senate of each contracting Government, marked the substantial growth of a change that had for some time been maturing in the two countries' relations. It was remarkable for committing Mexico to what for practical purposes was an unequal concession of rights within her territory, despite its allowing Mexican flights overland to Lower California. It gave occasion for some display of uneasiness among Mexican advanced liberals. The pro-Soviet labor-leader Vicente Lombardo Toledano a few weeks later questioned President Avila Camacho on the administration's designs toward the United States. The President in reply denied that Mexico had any secret treaty with the United States, that it would automatically go to war if the latter became a belligerent, that it had entered any military alliance or would cede any territory for military purposes. These assurances were borne out; but Mexico, adopting the same course as most of the American nations, seized German and Italian ships at her ports in April. Upon Japan's attack of December 7 on the United States, Mexico severed diplomatic relations with Japan, December 8, and with Germany and Italy, December 11. At the same time the Mexican Government recognized the United States as an American republic subjected to foreign aggression and as therefore entitled under inter-American agreements to the privileges of a neutral. The position that thus developed, particularly as to Japan, impelled Mexico to an effort to strengthen the defenses of the coast of Lower California.

Mexico's Gain by U.S. Bargains. The mutual concessions of facilities for flying helped the United States more than Mexico. The agreement under which the United States must take the surplus of strategic minerals helped both about equally, and the proceedings to indemnify expropriated U.S. nationals at Mexico's obvious expense helped the United States alone. On the other side of the account, the United States renewed purchase of the output of Mexican silver mines at a price above the world's market restored a virtual subsidy to Mexico. The U.S. Treasury's undertaking to hold up the dollar value of the peso relieved Mexican finances of a persistent worry. The proposal of discussions toward a reciprocal trade agreement raised hopes in Mexican quarters for freer access to the U.S. market. The Mexican Government could point to enough possible gain from the relations with the United States to silence much potential criticism.

Financial Policy. The Mexican peso had for some years betrayed the lack of one important feature of acceptable money, the ability to retain its value in terms of goods and of other money. The improved Mexican commercial balance in 1940 and 1941 made it possible to pin the peso at somewhat better than five to the dollar, and the renewal of the U.S. Treasury's support for the peso thereafter took the task off Mexico's hands. The country's financial position was much improved, yet it had not sufficient private capital for the development of promising enterprises. The lack was felt even in the mining field, where the demand for antimony much exceeded the supply, which in turn did not rise as fast as desired, there being little capital to increase it. There was comparatively no demand or expectation at this stage that communistic methods should take the place of private capital. On the other hand

expropriation of foreign capital had gone on for years and the collapse of Mexico's credit as a borrowing government had confirmed investors in wariness toward the Mexican field. While able to borrow money for a few special purposes from the U.S. Government, Mexico had lost the key to private credit. The question of putting the Mexican public dollar debt in order remained in the background as a possible future step.

Government and Labor. As President Avila Camacho found matters on taking office, government and labor were at variance on points where their provinces overlapped. Government ownership and management by organized labor formed a combination that still prevailed, though modified, in the National Railways and went on unmodified in the production of petroleum. The influence of communism remained strong in the Confederation of Mexican Workers (C.T.M.), the most conspicuous and powerful of the nation-wide unions, and those who led this body stood in a position to challenge an administration departing from the broad liberalism of the Cárdenas regime. Early in January a strike of the tramway workers in the city of Mexico put the administration to its first serious test. This union struck for higher wages.

The employer, a private company of foreign—British and Canadian—ownership, submitted that it was already losing heavily, even before it could meet its bill for electricity, by the limitation of passengers fares to 8 centavos (1¾ cents, U.S., in the depreciated state of the peso). The President brought about a quick settlement of the strike, granting an increase in fares to 25 centavos and requiring the company to raise the rates of pay and grant additional back pay as well. The strikers lost a demand for participation in the management of the enterprise. As the strike failed to reveal any man or element able and disposed to use it for thwarting the presidential authority, the settlement was taken as a success for Avila Camacho and for his policy of taking the middle road between the right and left of the Revolutionary party.

A more serious strike, in respect of the violence that it called forth, occurred in September. A union of workers in manufactories of munitions having started a strike, their leader, accompanied by a considerable body of persons, marched on September 23 to the residence of President Avila Camacho and there started a demonstration. A body of troops moved to the spot, opened fire, and reportedly killed 8 persons and wounded 24. The strikers in this case belonged to a union outside of the C.T.M. group, which might have made a stronger protest if its own members had been involved.

Effort to Save the Railroads. The Mexican National Railroads had received their first aid against domination by labor before Avila Camacho's presidency. Cárdenas had ordered, April, 1940, their return under the direction by the Federal Department of Communications and Public Works. This step alone effected nothing; it required supplementing by an administrative reorganization. An article appearing in the periodical review of the Banco Nacional de Mexico indicated that no effective improvement had been made up to April, 1941. This article made it appear that the railways had lost much of their rolling stock since 1915 through wear and tear and failure to renew, and that the money for maintaining the rolling stock, and for the care of line as well, had largely been preempted for meeting payrolls swelled by increases in pay and in unnecessary positions. The railroads had not even been meeting bills for all their current purchases

necessary to operation; yet they were currently paying 1,500,000 pesos more a month for wages than the 6,500,000 budgeted for this purpose. The manager's judgment was reported to be that it would take an outlay of 200,000,000 pesos and a reorganization of the personnel and pay to put the lines in proper order to handle business currently offered.

The problem as thus represented called for weighty measures, not easily to be brought into effect in time to prevent a thorough collapse in the operation of a depreciated system under the strain of higher than normal volume of traffic. Authority over the system early in 1941 rested partly in the administrative Council of the National Railways, a body of seven members, including three representatives of the employees' unions. Early in April, however, the withdrawal of the unions' three members was announced. They alleged that the Council had ignored their demands in its formulation of policies. On October 1 the President made his brother, Gen. Maximino Avila Camacho, Minister of Communications, thus putting the executive department responsible for administration of the railroads in the hands of a man known for more conservative connections than the president's own. The step permitted of the interpretation that President Avila Camacho had decided to override rather than conciliate the unionist element that obstructed steps to improve the railroads' operation. It remained an unsettled question at the end of the year whether, having thus set a course toward the conservative ideal of running the railroads within their income, the President could make the trip to that goal despite ostensible opposition from ex-President Cárdenas, who had established employees' operation of the railroads.

Reform in the Petroleum Industry. The ills of the socialized petroleum industry remained uncured but not wholly untreated. Efforts to make the expropriated companies take what the government offered in the way of compensation dominated policy toward petroleum throughout the year. In February Minister of the Interior Aleman declared that when the expropriated companies had settled for their compensation Mexico would again allow foreign capital to exploit petroleum. The administration procured the enactment in March of an amendment to the petroleum code, striking out the measure (of Cárdenas's proposal) which had excluded foreign capital from this field. In July it appeared that Mexico negotiated unsuccessfully with the United States for the latter to purchase 18 months' output of the Mexican fields—an arrangement that might have enabled Mexico to wait with equanimity for the expropriated companies to take what they could get. In August began Mexican shipments of oil on a moderate scale to Brazil.

The negotiations that eventuated in the general accord signed November 18 were pursued by the Governments of Mexico and the United States through the three months previous. The Mexican negotiators entered on their task expectant that the desire of the United States to secure Mexico's goodwill before having to face enemies elsewhere would help carry Mexico's point against the expropriated American producers of petroleum. The Mexicans made a new offer, to deposit \$9,000,000 in token of willingness to indemnify and then to leave the setting of the proper total of indemnity to future negotiation, presumably after the end of the United States' international difficulties. They continued to insist that Mexico would indemnify only for the loss of assets on the surface and not for the loss of potential petroleum in the depths of the earth.

Washington was reported to have pressed the American claimants to cede the latter part of their claims—about nine-tenths of the commonly estimated whole, but more problematical than the total of the assets on the surface.

The failure of the American claimants to assent was definitely recognized only 11 days before the execution of the agreement of November 19. The new plan for settling the claims, so far as the official U.S. summary of those agreements showed, did not stipulate the exclusion of underground petroleum from such assets as might give substance to a valid claim. It required that an expert for the United States and one for Mexico should be appointed within 30 days. They were to agree on and report within five months the amount of compensation that Mexico must pay, or else each report to his own Government within another 30 days if no agreement proved possible. The Mexican Government meanwhile made the "token" deposit proposed early in the negotiations, in the sum of \$9,000,000.

Education and Cult. President Avila Camacho as a candidate, before taking office, guardedly approved a measure that had originated in his predecessor's time—the provision of free compulsory education, in harmony with the socialistic faith, in governmental schools and a corresponding ban on schools connected with a religious cult. After taking office, he nonetheless took successive steps to limit the work of socialistic indoctrination in the schools. In particular Luis Sanchez Ponton, an intellectualist liberal, withdrew as Minister of Public Education, and the president filled the vacancy in September, 1941, with Octavio Vejar Vazquez. This new head of education applied vigorously to the 80,000 members of the teaching corps a new presidential decree compelling them to abandon all political activity on pain of disqualification.

The decree shut teachers out not only from political activity of a strictly partisan sort but also from the established membership of teaching groups in the Confederation of Mexican Workers and the National Peasants' Confederation. The Communist party organization stood to lose a useful part of its personnel if the decree should remain in force. The schools of the Roman Catholic Church, formerly active in elementary education, remained bereft of the right to teach, but the impression was reported as widespread in Mexico that Avila Camacho was favorably disposed to that church and would not use against it the severity that was contemplated under the anti-religious provisions of laws still unrepealed.

A body known as the Sinarquistas came into note during the year as seeking to conduct a colonization of lands in Lower California. The Chamber of Deputies failed in October to grant to the Sinarquistas the privileges sought for this purpose, but the President authorized their scheme by decree. The organization was regarded as in harmony with some leaders of the Catholic faith and was described by its leader, Salvador Abascal, as anti-Fascist and anti-Communist. Its membership was rated at 150,000 by the most moderate estimate and much higher by others. Some expressions in its periodical *El Sinarquista* were frankly anti-revolutionary. The prevailing type of the members was rural.

Personalities. In addition to making Gen. Maximino Avila Camacho Minister of Communications and thus establishing a tie with former President Portes Gil, the President permitted the return, May 5, of former President Calles from exile. On December 18, he appointed ex-President Cárdenas

to command all Mexican military and naval forces on the Pacific coast.

See *ARCHAEOLOGY*; *BANKS AND BANKING*; *COLUMBIA under History*; *COMMUNISM*; *CUSTOMS, BUREAU OF*; *LABOR CONDITIONS under Governments and Labor Disputes*; *LEND-LEASE ADMINISTRATION*; *LIBRARY PROGRESS under International Activities*; *MUSIC*; *NARCOTIC DRUGS CONTROL*; *ROMAN CATHOLIC CHURCH*; *SEISMOLOGY, SOCIETIES under Geographic Society*; *THEATER*; *UNITED STATES under Latin America*.

MICHIGAN. An east north central State. Area: 58,216 sq. mi., including 1,194 sq. mi. of inland water, but excluding parts of: Lake Erie, 216 sq. mi.; Lake Huron, 8,975 sq. mi.; Lake Michigan, 13,037 sq. mi.; Lake St. Clair, 116 sq. mi.; and Lake Superior, 2,212 sq. mi. Population: (1940 census) 5,256,106. The urban population comprises 65.7 per cent of the total (U.S. average, 56.5 per cent), non-white population, 4.1 per cent (U.S. average, 10.2); elderly (65 years and over), 6.3 per cent. Michigan ranks 22nd among the States in area, seventh in population, and 12th in density, with an average of 92.2 persons per square mile. The capital is Lansing with 78,753 inhabitants, largest city, Detroit, 1,623,452. There are 83 counties and 43 cities of more than 10,000 inhabitants (see article on *POPULATION* in 1940 YEAR BOOK). For statistics on births, deaths, accidents, see *VITAL STATISTICS*.

Education. According to Eugene B. Elliott, Superintendent of Public Instruction, there were 973,737 pupils enrolled in the public schools of Michigan during the school year 1939-40, 606,511 in elementary schools and 367,226 in secondary schools. Teachers numbered 32,716 and received an annual average salary of \$1,598.23. Total expenditures for the year including general operating costs, capital outlay and debt service were \$100,725,419.

Transportation. State highway mileage in 1939, including streets under State control, totaled 9,292, of which 8,765 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 1,556,571; 1,400,838 were private and commercial automobiles, 848 busses, and 150,875 trucks and tractor trucks. Gross motor-fuel consumption was 1,253,535,000 gallons. Net motor-fuel tax receipts were \$32,479,000, the rate being three cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$24,115,000.

Railways of all classes extended 7,338 miles (Dec. 31, 1939) 3.12 per cent of the total mileage in the United States. Class I steam railways (4,951 miles) reported 37,788,748 tons of revenue freight originating in Michigan in 1940 and 48,345,432 tons terminating in Michigan. There are 119 airports and landing fields in the State (17 lighted fields) and 31 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 915 civil aircraft in the State and 3,160 airline transport, commercial, and private pilots (2,755 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 7,728,000, as compared with 7,765,000 acres in 1940. According to the latest census, there are 187,589 farms, valued at \$912,545,223, averaging 96.2 acres each. Farm population numbered 872,775 or 16.6 per cent of the total. Leading crops with production in 1941 were: corn, \$38,426,000, 48,032,000 bu.; hay, \$31,663,000, 3,308,000 tons; dry beans, \$25,960,000, 5,706,000 bags; oats, \$19,278,000, 45,900,000 bu.; wheat, \$17,258,000, 16,594,000 bu.; commercial truck crops, \$14,333,000; potatoes, \$13,614,000, 20,020,-

000 bu.; and apples, \$5,640,000 for 7,520,000 bu. **Manufacturing.** According to the latest census (for the year 1939) the total value of manufactured products was \$4,348,223,244. For details, see 1940 YEAR BOOK.

Mineral Production. Leading mineral products in 1940 (with 1939 figures in parentheses) were: Iron ore, 13,751,970 gross tons valued at \$40,474,951 (11,238,605 gross tons, \$37,026,665); petroleum, 19,764,000 barrels (23,462,000 barrels valued at \$21,350,000); pig iron, 1,340,402 net tons, \$18,472,588 (1,275,640 net tons, \$18,872,150); coke, 2,872,026 net tons (2,430,688 net tons, \$12,408,881); cement, 8,519,416 barrels, \$11,389,191 (8,327,479 barrels, \$10,891,978); copper, 91,486,806 pounds from domestic ores only (87,970,000 pounds from all sources valued at \$9,148,880); natural gas, 1940 figure not available (10,726,000 M cubic feet valued at \$7,411,000 in 1939); salt, 2,506,523 short tons, \$7,123,393 (2,408,872 short tons, \$6,726,912); stone, 13,527,170 short tons, \$6,891,433 (11,138,280 short tons, \$5,890,728).

The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$115,969,514 or 2.74 per cent of the total for the United States. (Duplications are eliminated in State totals; e.g., iron ore is included and pig iron is omitted; coke also is omitted.) Michigan ranks tenth among the States in value of mineral production.

Trade. According to the 1940 census there were 6,908 wholesale establishments in Michigan, employing 52,292 persons, reporting net sales for 1939 of \$1,926,474,000 and annual pay roll of \$88,969,000. There were 67,414 retail stores with 198,018 employees, sales totaling \$1,820,798,000, and pay roll of \$204,026,000. Service establishments numbered 22,624, employing 38,153 persons for \$41,725,000 per year, and reporting a business volume amounting to \$133,271,000. The leading business center of the State is Detroit which reported wholesale sales of \$1,304,451,000, retail sales of \$665,565,000, and \$75,208,000 receipts for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Michigan was \$103,978,000. Under the Social Security program, financed by Federal funds matching State grants, 88,768 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$17.13 (U.S. average pension, \$21.08); 50,768 dependent children in 21,459 families received average monthly payments of \$40.45 per family (U.S. average, \$32.73); and 1,244 blind persons received \$23.93 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 32,829 and received \$19.68 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 4,313 (\$286,000); NYA student work program, 17,659 (\$136,000); NYA out-of-school work program, 11,278 (\$265,000); WPA, 48,838 (\$2,966,000); other Federal emergency projects, 24 (\$2,000); regular Federal construction projects, 6,523 (\$941,000). The Farm Security Administration certified subsistence payments totaling \$20,000 for the month to 413 cases.

Legislation. The Legislature convenes in regular session on the first Wednesday of January in odd years. It is composed of 32 Senators (10 Democrats and 22 Republicans in 1941) and 100 Representatives (32 Democrats and 68 Republicans).

Legislation in 1941. The Legislature recessed on May 27, 1941, having turned out only 250 laws, few of them of any importance. Results prior to the recess were summarized by James M. Haswell in the *Detroit Free Press*, May 28, 1941, in part as follows:

The division of power between the Republican Legislature and the Democratic Governor produced a political stalemate. The Governor didn't get the liberal legislation that he asked for in January, and his veto power kept down the most reactionary proposals under discussion in May Prosperity, public preoccupation with the war, and a swelling State Treasury also had moderating effect.

The Legislature passed and the Governor promptly signed a long-discussed bill creating a central tax collecting department—the major government reform achievement of this session.

The Legislature proposed, and the voters approved in April, a constitutional amendment to put an end to open and notorious fraud in the assembling of initiatory and referendum petitions. The Legislature granted enforcement powers to the State Board of Canvassers and extended the reform by granting enforcement powers over local nominating petitions to county officials.

The Legislature reenacted the Milk Price Control Law which the Supreme Court invalidated, making changes to conform to the court's decision.

Admitting that Detroit and Wayne County took a shelling from the Legislature on the question of school aid, Chairman William Buckley, of the Detroit delegation, in the House pointed out that many bills serving Detroit's interests had passed. Among the bills he listed were measures authorizing "redevelopment" of the city's blighted areas, authorizing the Detroit refunding plan; authorizing construction of public buildings for Wayne University, creating a Wayne University Board of Regents; authorizing development of Federal-city defense housing projects, exempting city accounts from operation of the escheats law. A bill to authorize zoning of land around airports was passed.

Bills vetoed by the Governor included those creating a separate purchasing department and forbidding the creation of intercity banking chains. However, a number of vetoed measures were reconsidered when the Legislature reconvened July 8 after what was described in the *Free Press* (Jan. 4, 1942) as a "veto-recess quarrel" between Gov. Van Wagoner and the Republican legislators. Final results of the year, in addition to those enumerated above, were commented upon by that paper as follows:

New weapons for defense—among them the Brake Act providing drastic felony penalties for sabotage—were forged by the Legislature among the 167 new laws which will confront Michigan citizens January 10. The anti-sabotage act provides five years imprisonment or a \$10,000 fine or both, for "intentionally interfering with, hindering defense materials by destroying property," a similar punishment for intentionally selling defective munitions, defense materials, and machinery to the government, or for intentionally omitting to cite defects found on inspection. Frustrated sabotage attempts will subject the offender to half the penalties, as will incitement of others. Conspirators will be dealt with as firmly.

Acts authorizing issuance of bonds for airport development and giving aeronautics board agents the law enforcing power of deputy sheriffs; a measure making it a felony to damage or destroy State Police fire and police equipment; a law permitting counties to contract with cities for water, sewer, drainage, sewer disposal, or fire protection; a more limited measure applying to townships; a penal code change permitting greater flexibility in the use of police agencies in the suppression of riots and a limited access highway authorization are among the major defense statutes.

Enactment calling for election boards to speed returns to county clerks and the latter to the secretary of state are an interesting prelude to a campaign year. Other election changes give first column on the ballot to the party whose secretary of state candidate received the highest vote, authenticate nonpartisan elections for villages, advance partisan primaries for cities and villages from March to February; permit supervisors to initiate county civil service plans; close registrations of voters 20 days before elections in townships as well as cities.

Most important of a score of laws affecting schools was that authorizing a one-tenth mill tax levy for construction or maintenance and the establishment of sinking funds to escape stringency of tax limits.

An appeal by the people on issues of law is an innovation in court procedure. The residence qualification in divorce petitions was cut from two to one year. New protections are added for the support of children born out of

wedlock and new punishments for contempt in divorce orders affecting children. No-funds check penalties were increased; flings of supplementary information against habitual criminals were provided for, stolen property fences were made subject to felony penalties on a third conviction; and provision was made to legalize retention by the State of cash and property taken in gambling raids. The State's fireworks ban was made more rigid and controls were established for transportation of explosives by truck. Establishment of a crime laboratory by the State Board of Health was ordered. County Boards of Health were provided for. Architects were forbidden to have a pecuniary interest in the sale of building materials. Debt-collecting agencies were ordered to provide bonds. Supervisors were forbidden to hold salaried Road Commission jobs. Uniform bread weight standards were provided. A Fair Trade law forbids false representations that merchandise is being sold "at wholesale."

The question of State finance occasioned innumerable legislative headaches, with Gov. Van Wagoner advocating retirement of half of the accumulated deficit in the ensuing biennium and the Legislature attempting to vote all-time high appropriations, but it was unexpectedly solved by an increase in 1941 receipts. Use tax and sales tax receipts produced \$8,000,000 above estimated and other taxes increased also. As a result, the State ended the calendar year, 1941, with a balance of about \$4,000 (excluding \$6,000,000 appropriations for deficit retirement) as compared with a \$30,000,000 debt three years previously.

Finances. Total tax collections in Michigan for the fiscal year ending in June, 1941, were \$229,368,000 (1940: \$194,199,000). Total sales taxes amounted to \$112,499,000, including general sales, \$73,632,000, motor fuel, \$34,279,000. Taxes on specific businesses ran to \$14,420,000, general and selective property, \$13,442,000, inheritance, estate, and gift, \$4,176,000, unemployment compensation, \$57,208,000. Cost payments for the operation of general government totaled \$208,896,000 in 1939, the latest year available. (Revenues for the general government for that year were \$198,287,000.) Cost of operation per capita was \$40.86. Total gross debt outstanding in 1941 was \$89,140,000, as compared with \$94,040,000 in 1932.

Officers and Judiciary. The Governor is Murray D. Van Wagoner (Dem.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, Frank Murphy; Secretary of State, Harry F. Kelly; Attorney General, Herbert J. Rushton; State Treasurer, Theodore I. Fry; State Auditor, Vernon J. Brown. Chief Justice of the Michigan Supreme Court is Edward M. Sharpe; there are seven associate members elected by popular vote for eight-year terms.

See LIBRARY PROGRESS under *State Aid*; PLANNING.

MICROFILM. See PHOTOGRAPHY under *Applied and Scientific*.

MICROSCOPES. See PHYSICS.

MIDDLE CONGO. See FRENCH EQUATORIAL AFRICA.

MIDWAY ISLANDS. A group of islands in the North Pacific (28° 12' N., 177° 22' W.), 1,304 statute miles to the northwest of Honolulu; belonging to the United States. The islands surround a central lagoon. Land area, 28 square miles. Since 1935 the previously uninhabited islands have been used as a station on Pan American Airways' transpacific route to Manila. They are under the jurisdiction of the U.S. Navy Department.

In 1939 Congress authorized commencement of work on naval air and submarine bases at Midway and in March, 1941, the sum of \$9,707,000 was voted for the completion of landing fields, improved airplane repair facilities, and a fully equipped submarine base. The program called for

the cutting of a channel 30 feet deep and 300 feet wide into the central lagoon to accommodate large seaplane tenders and submarines; also the construction of a pier. Effective May 15, 1941, the islands were designated a "naval defensive sea area" by Presidential proclamation. Unauthorized vessels and aircraft were barred from a three-mile zone around the islands. The islands were repeatedly attacked by Japanese planes in December. See WORLD WAR.

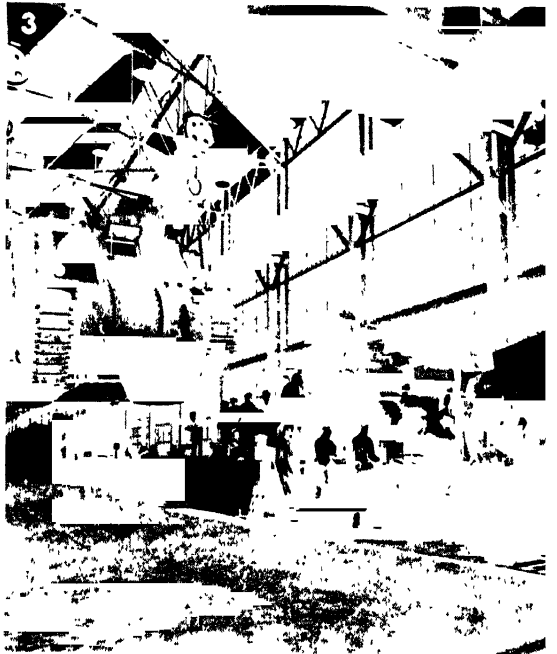
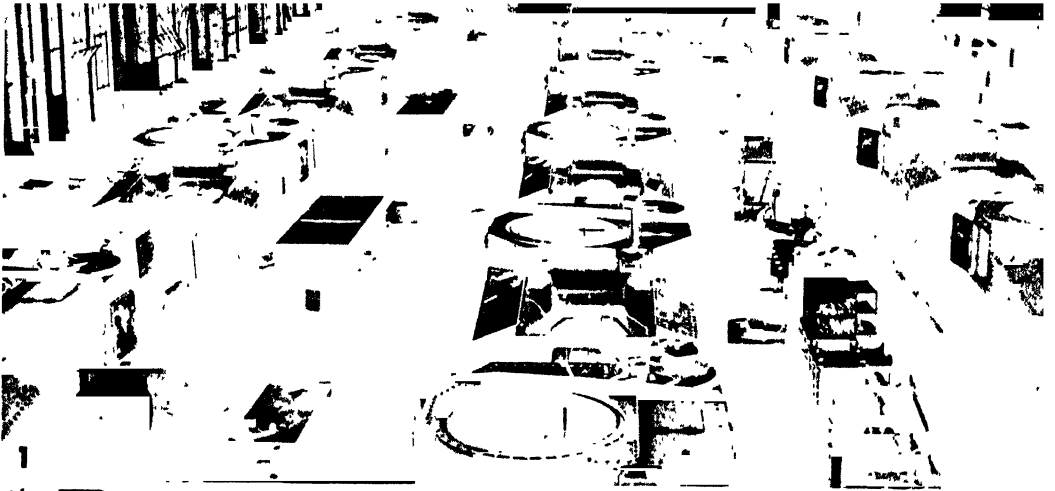
MILITARY PROGRESS. The airplane and the armored vehicle, and the art of handling them, tactically and strategically, continued during the year to rise in military importance and popular respect as their worth was further demonstrated on battle fronts from northern Africa to the Pacific. Each possesses those most important elements of warfare, which have become intimately associated with the term "blitzkrieg"—rapidity of movement, capacity for surprise, great firepower, and a relatively high degree of protection (armor and speed in the case of the vehicle, great speed and some armor in the case of the airplane). They are also comparable to the extent that each is best combatted by similar weapons, i.e. a bombing plane by pursuit plane, tanks by other tanks or self propelled or motorized artillery. In North Africa the British, through skillful and daring use of their tanks in the favorable terrain of the desert, drove the Italians back from the Egyptian border and well into Libya. Later, the British north African forces having been weakened by the Grecian campaign, the German armored forces crossed into North Africa and in another instance of tank warfare drove the British nearly back to the Egyptian border. As the year closed, the tide was again turning and the British were driving westward. This field of action favored tank warfare because of the flat, featureless ground which offered no natural barriers to the vehicles and gave no natural cover for unprotected infantry or artillery. Co-operating aircraft acted as eyes for the ground columns, aided in the attack, and fought off enemy airplanes. Infantry and anti-tank artillery were relatively successful in the defense of towns, forts, etc., but the armored vehicle was found to be absolutely essential to the offense.

The high point in the exploitation of the military powers of the airplane was reached Dec. 7, 1941, in the treacherous attack of the Japanese upon the United States Naval Base at Pearl Harbor and the adjoining United States Army airfields. As far as accurate information was available at the end of the year, the sinking of the *USS Arizona* in that attack marked the first destruction of a battleship by an aerial bomb. At the same time the battleships *USS Utah*, which was used as a training ship for anti-aircraft gunnery, was sunk, and the *USS Oklahoma* capsized but was reported to be recoverable. Other lesser vessels in the harbor were sunk and damaged, while Army losses were severe in aircraft and some hangars. In this engagement the Japanese skillfully, though perfidiously, utilized the capabilities of the airplane to deliver rapid, paralyzing blows. So great was the surprise made possible by the airplane, that President Roosevelt appointed a board to determine if there was any error of judgment which contributed to the surprise and if there was any dereliction of duty prior to the attack. Local air superiority was achieved almost at once by destroying many of the defensive planes on the fields and in the hangars. Speaking of the attack, the Secretary of the Navy, Hon. Frank Knox, said: "In its immediate effects and nearby results, it was a successful engagement for the enemy." Two days

later, on December 9, Japanese airplanes with bombs and torpedoes sank the British battleships *HMS Prince of Wales* and *Repulse* which were attempting to repel a landing on the coast of Malaya. The British Prime Minister, Hon. Winston Churchill, in a speech to parliament on December 11 said, "The Japanese onslaught has brought upon the United States and Britain very serious injuries to our naval power. In my whole experience I do not remember any naval blow so heavy or so painful as the sinking of the *Prince of Wales* and *Repulse* on Monday last." While the losses in these instances were naval losses the blows were inflicted by weapons which may operate from the military bases on land as well as from the floating landing fields (aircraft carriers). The land Army's defense against naval attack, or the repelling of transports carrying soldiers, formerly was limited to the range of shore based artillery. Now it is limited only to the ever increasing range of bombing and torpedo launching aircraft.

These two instances are examples of local conditions and skillful employment contributing to the making of the new weapons supreme—the tank in the Libyan Desert and the airplane at Oahu. Nevertheless it must not be construed that they alone can win all battles or wars. There still is to be found a balance between them and the older components of the military machine. In the 2,000-mile front from the Baltic to the Black Sea by far the greatest part of the fighting was by the infantry-artillery team. Thousands of tanks and airplanes were engaged and more will be used as rapidly as they can be produced and taken to the front. The most effective proportion of these new arms to the older ones probably will not be determined until the war has progressed much farther. Because of the effectiveness of these weapons and because their losses in battle are very great, nations today gage military might in terms of capacity to put airplanes and tanks into the field. However, there is every evidence that the mass use of airplanes has changed, and is continuing to change the concept of land and sea warfare. On the land they have resulted in reorganization of virtually every arm of the service. On the sea they have shifted the emphasis from the heavy battleship to the smaller cruiser and destroyer classes. As to what further alterations they will bring about the world will have a foretaste during 1942.

There has been an increasing trend toward the organization and training of troops for specific purposes, to which the term of "task force" has come to apply. This tendency has been necessitated by the world-wide nature of the war and made possible by the enormous size of the armies involved. In this new movement toward military efficiency, the United States has been in the forefront. Two examples are the holding forces sent by the United States to Iceland and to Dutch Guiana. Neither of these was standard military organization with standard equipment. One had been trained in cold weather with clothing and equipment specially designed for low temperatures. The other was prepared by training and equipment to live and fight in torrid temperatures. Each had weapons selected for its specific task. Both had been trained in the technique of landing, unloading, and setting up its living and fighting equipment for the specific mission in the specific zone to which it was to be sent. Another task force has been the British Army's Commandos, designed solely for raiding enemy-held towns and installations along the coast. With rapier-like thrusts, the Commandos have inflicted appreciable losses to the enemy with comparably

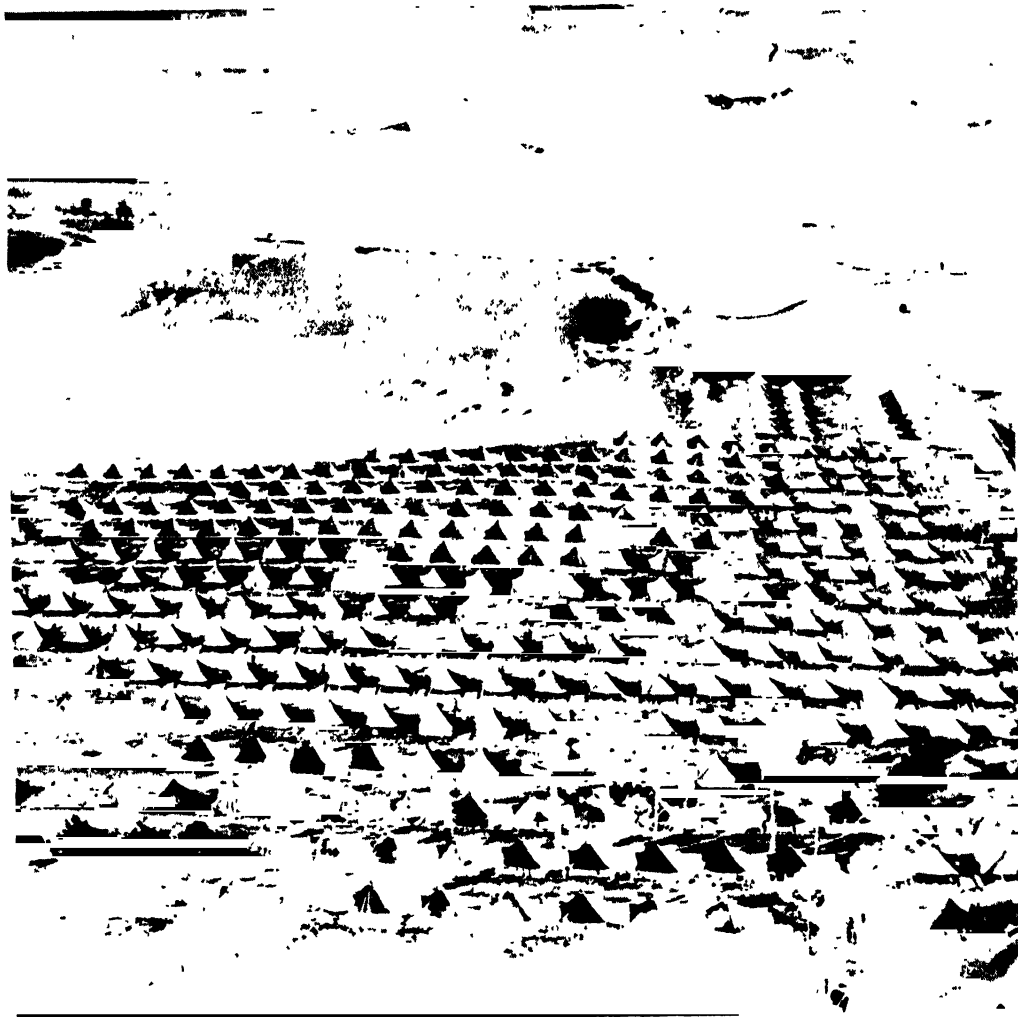


Photos courtesy of the manufacturer

(1) U.S. M-3 TANKS ON THE ASSEMBLY LINE

(2) COVERED FOR SHIPMENT—(3) LOADED ON FREIGHT CARS

(4) TESTED AT THE PROVING GROUND

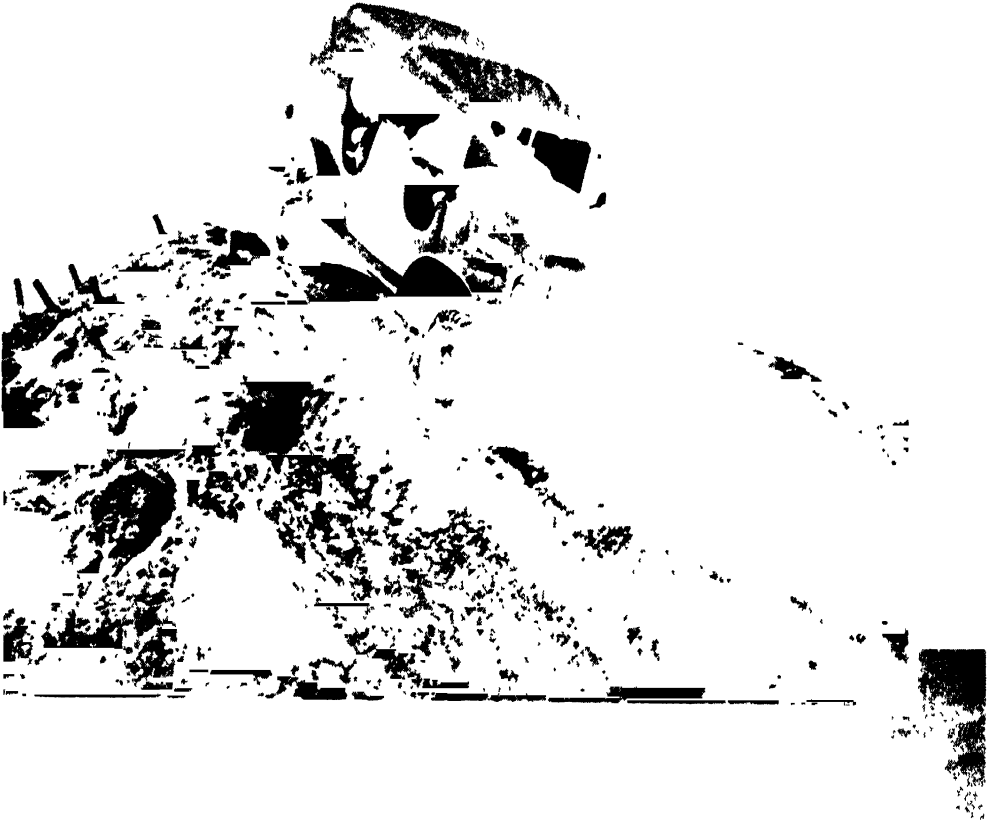


Wide World

International News Photo

REHEARSALS FOR WAR

Above: Bivouac area near Lillesville, N.C., for the 111th Infantry during extensive maneuvers in that area by members of the First Army. Below: Assault boats and a foot-bridge constructed by engineers near Fort Knox, Ky., during maneuvers of the Armored Force. The foot-bridge paved the way for attack by heavy tanks. The men wear inhalators as a protection against dust.



LIGHT CARS ON HEAVY DUTY

A Dodge Army reconnaissance car coming down after going up
(OEM Defense Photo by Palmer)

A 50 Caliber Anti-Tank gun mounted on a jeep for Second Army Maneuvers in Louisiana.
(Photo by U S Army Signal Corps)



Infantry and Artillery

**MULTIPLE 12-BARREL REAMING MACHINE PRODUCING MACHINE GUNS—105 MM. SHELLS ON A MONORAIL CONVEYOR
TWO BOFORS RAPID FIRE ANTI-AIRCRAFT CANNONS**

small losses themselves. Their greatest value has been to force the Germans to strengthen the garrisons at many important points and thus bring about some dispersion of German force. The German threat of invasion has contained many troops in the British Isles which might well be employed elsewhere. It is to develop for herself this advantage of the initiative that England is building up her Commandos. Another type of task force, which while not new has risen in importance recently, is the mountain troops. Italy, which has virtually no mountain troops, found her offensive against Greece bog down and suffer severe reverses because the latter has especially trained and equipped mountain troops. Greece held the upper hand until Germany, which since the World War has made considerable progress in that line, brought in her mountain divisions and drove the Greeks back.

See AERONAUTICS under *World War*; BOMBS; PHOTOGRAPHY under *Military Photography*; PSYCHIATRY, WORLD WAR. Compare the topics listed under NATIONAL DEFENSE, NAVAL PROGRESS. See the foreign countries under *Defense* or *History*, especially (for tactical reorganization) NEW ZEALAND.

Army of the United States. The year 1941 saw an enormous expansion in the military forces of the United States. The Army of the United States began the year with a force of approximately 600,000 officers and enlisted men. The last official announcement in 1941 of its strength was issued on October 9. (On Jan. 8, 1942, Secretary of War Stimson in a formal announcement stated that plans had been instituted to increase the Army of the United States from a personnel strength of 1,700,000 to 3,600,000.) The October 9 strength was 1,588,500, distributed as follows:

<i>Officers</i>	
Regular Army	15,000
National Guard	22,000
Reserve Officers	76,000
Total	113,000
<i>Enlisted Men</i>	
Regular Army, 3 year enlistments	505,000
Regular Army Reserve and one year enlistments	17,500
National Guard in Federal service	248,000
Selective Service Trainees	705,000
Total	1,475,500
<i>Total Combined Strength</i>	
Regular Army	537,500
National Guard	270,000
Reserve Officers	76,000
Selective Service Trainees	705,000
Total	1,588,500

The U. S. Army made considerable progress in its air arm. For the first time since 1932 the War Department was given an Assistant Secretary for Air, Mr. Robert A. Lovett, who was confirmed in that post Apr. 18, 1941. In June (1941) a new organization known as the "Army Air Forces" was set up. It is composed of the Headquarters Army Air Forces, the Air Force Combat Command, the Air Corps, and all other air units. Also created was an Air Council to review and coordinate all major aviation projects of the Army. Maj. Gen. Henry H. Arnold, deputy Chief of Staff, was appointed Chief of the Army Air Forces and later elevated to the rank of lieutenant general. Lieut. Gen. Delos C. Emmons, who had been commanding general of the General Headquarters Air Force was made Chief of the Air Force Combat Command, which succeeded it. Following the Japanese attack on Hawaii General Emmons was sent to command the Hawaiian Department, thus becoming the first air

officer to hold that key post. Maj. Gen. George H. Brett remained as chief of Air Corps under the reorganization, although at the beginning of the year 1942 he was made deputy to Gen. Sir Archibald Wavell, Supreme Commander of the sea, land, and air forces of the United Nations in the South West Pacific Area—another recognition of the importance of the American air forces.

The reorganization came at a time when there had been considerable agitation in Congress for the creation of a separate and independent air force. The War Department was strongly opposed to such a step. Therefore at the time of the reorganization of the air component of the Army, the Secretary of War, Hon. Henry L. Stimson, wrote a letter to the Chairmen of the Military Affairs Committees of the House and Senate in which he characterized the independent air force as neither "prudent nor desirable . . . in the midst of a national emergency." He explained the War Department's action in respect to its air forces as follows.

"The measures which we have taken are designed to integrate all factors which will promote air power. We are more concerned with accomplishing the desired results than we are with the language used to describe the process. However, we think it is a fair description of the method of obtaining successful results at this critical stage of air power to say that we favor autonomy of the air arm rather than segregated independence. Such autonomy will facilitate and ensure the joint action of air, ground, and naval forces which the progress of the present war is so clearly demonstrating.

"I have, therefore, issued orders establishing the Army Air Forces, which will embrace the existing GHQ Air Force and the Air Service Branches of the Air Corps in a single unified organization. This will thus combine both combat units and service units and the entire organization will be under a high ranking air officer who will be responsible only to the Chief of Staff of the United States Army.

"Furthermore, an Air Staff has been established in connection with this new organization.

"By these moves the air activities of the Army, both in the elements cooperating with ground forces and those comprising long range striking forces, would in effect constitute a Unified Force from which trained units could be dispatched, as elements of a task force, to the Commanding Officer in charge of any theater of action, whether he might be an Army Officer, a Navy Officer, or an Air Officer."

Four Air Forces were set up in the continental United States, corresponding generally to the four field armies. The First Air Force has headquarters at Mitchel Field, Long Island, N.Y.; the Second at Spokane, Wash., the Third at Tampa, Fla., and the Fourth at Riverside, Calif. Each Air Force has an Interceptor Command, a Bomber Command, an Air Support Command, and a Base Command. An additional Air Support Command was organized to cooperate with the Armored Force.

Other phases of the employment of air power also were developed. Prior to our entry into the War, the newly created Provisional Parachute Group was increased to four battalions, the 501st, 502d, 503rd, and 504th. Facilities for transporting regular ground troops by air were increased through the development of the cargo type of airplanes. The training of personnel in the operation of gliders was pressed and experimentation carried forward in the design and construction of large transport gliders.

Secretary Stimson, in his annual report for the fiscal year 1941, treated of the Army's plans for and attitude toward its air component as follows:

"Acting in well-trained cooperation with our ground forces, our shorter ranged dive and attack bombers are supplementing and expanding in warfare of rapid movement the demolition and counter-battery work formerly the exclusive role of our heavy artillery. And, guided by the carefully worked out detection systems of home defense which are now being installed throughout our seacoast states, our swift interceptors and fighting planes are planning to defend our large cities from approaching enemy bombers.

"Naturally such a revolutionary growth of air power

could not take place without differences of opinion as to its proper organization and control. These differences of opinion have been world-wide and the air power of different nations has been developed on patterns and under methods which have differed from each other. In America we have had the advantage of studying the effect of the test of war upon these differing theories and methods.

"We are trying to give the organization of our own air force the full benefit of the lessons which have been thus learned. From them there seem to stand out certain clearly demonstrated principles. An air force should have the freedom through independent experimentation and research to develop new forms of aircraft which will embody the latest improvements in the manufacturing art as well as the power to procure for its own force such new types of planes. It should also have the freedom to plan for their effective use and to select and train the special personnel—pilots, bombardiers, navigators, observers, and mechanics, necessary to operate the planes. It should have the power to create an air staff to plan air strategy and effective cooperation with ground and naval forces, and it should have the power to insure the permanence of the technique which it thus creates by the training and creation of an adequate permanent force of regular officers.

"On the other hand, when it performs its final and most critical function, namely, that of fighting in cooperation with armies on the surface of the land or navies on the surface of the sea, it must submit itself to the conditions which make that cooperation as perfect as possible. And the experience of this war has fully demonstrated that such cooperation cannot be perfected without a unity of command and that this unity of command cannot be successful unless it extends to combined training taken in preparation for cooperation as well as to the acts of cooperation themselves.

"In our recent revision of the organization of the Air Corps we have endeavored to carry out these guiding principles. The rival views formerly held in the air and ground forces have, I believe, been thoroughly reconciled and the soundness of the new organization is now cordially acquiesced in by both sides."





The Armored Force began the year with two Armored Divisions and completed the year with five. Early in March, the Armored Force Replacement Center was activated at Ft. Knox, Ky, and filled with Selective Service men, these men being used later for the newly activated Armored

Force units, including the 3rd Armored Division, Camp Beauregard, La., the 4th Armored Division, Pine Camp, N.Y., and the 5th Armored Division, Ft. Knox, Ky. The 1st GHQ Reserve Tank Group Headquarters was activated at Ft. Knox in February and all GHQ reserve tank battalions placed under it.

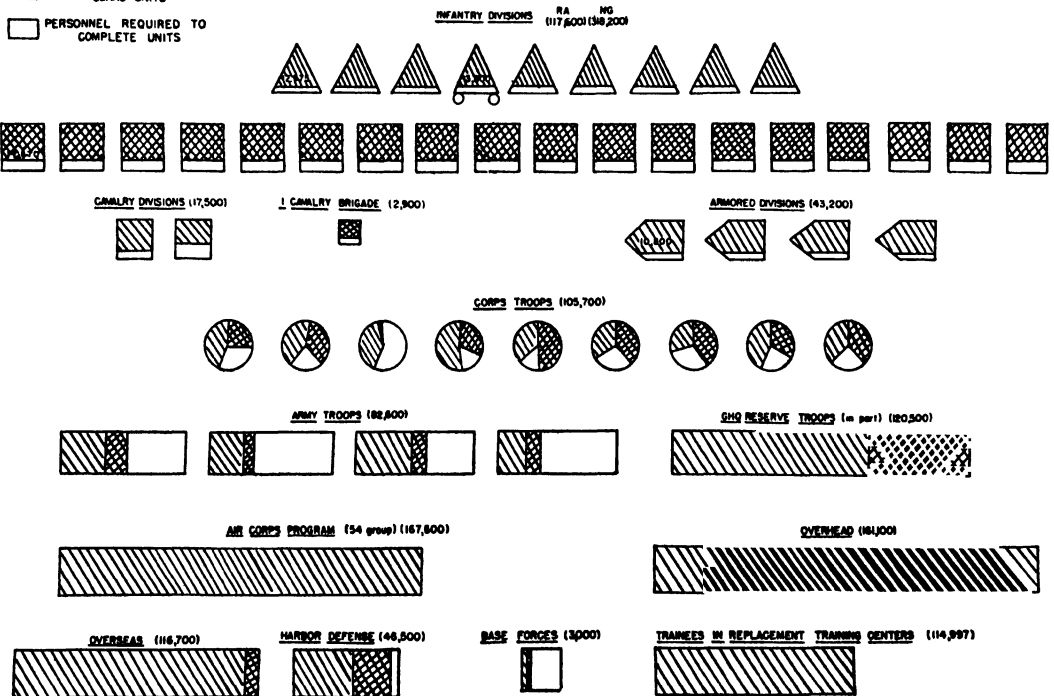
Maj. Gen. Adna R. Chaffee (see NECROLOGY), a pioneer in Army mechanization and first commanding general of the Armored Force, died in August and Maj. Gen. Jacob L. Devers, a field artilleryman, succeeded to that post. Near the end of the year, as a result of General Devers' recommendations, authority was given to reorganize the Armored Divisions effective Jan. 1, 1942. Principally, the reorganization provides more medium tanks than light tanks, self-propelled assault artillery, and substitution of armored cars for scout cars. A partial comparison of weapons in the old and new Armored Division organization is as follows.

	New	Old
Light tanks	158	273
Medium tanks	232	108
Scout cars	None	97
Armored cars	79	None
105-mm. Howitzers (Self-propelled)	54	36
75-mm. Howitzers, Self-propelled (in addition to 75-mm. in tanks)	39	None
75-mm. guns	None	8
37-mm. Anti-tank guns, Self-propelled (in addition to 37-mm. in tanks)	27	None
81-mm. Mortars	24	20
60-mm. Mortars	38	21

Coincidental with the development of the newer arms, the Army of the United States carried forward with vigor the building up of the older infantry and artillery components on the bases of the lessons learned from the war in Europe. The replacement training center system was established to

-  ORGANIZED REGULAR ARMY AND NATIONAL GUARD UNITS
-  TROOPS ASSIGNED TO REGULAR ARMY UNITS
-  TROOPS ASSIGNED TO NATIONAL GUARD UNITS
-  PERSONNEL REQUIRED TO COMPLETE UNITS

ENLISTED PERSONNEL OF THE UNITED STATES ACTIVE ARMY
June 30, 1941—1,418,097



give the new recruits the basic school of the soldier. To supply the large numbers of junior officers needed for the new units, Officer Candidate Schools were established to which selected enlisted men (both from the Selective Service men and from voluntary enlisted men) are being sent for three months' courses, upon successful completion of which they are commissioned second lieutenants in the Army of the United States.

Extensive field exercises were held in the summer and fall for the training of the divisions, corps and armies. Of these, the one conducted in Louisiana and Texas in which the Second and Third Armies participated, was the largest peace time maneuver ever held.

In its physical establishment, men under training, and legislative authority, the United States found itself better prepared for the war that was forced upon it, on Dec. 7, 1941, than for any other war in its history—that is, in comparison with its own previous states of preparedness, not in comparison with the other powers involved.

See AUSTRALIA under *History* Matters affecting the U.S. Army are discussed also under DEFENSE HEALTH AND WELFARE SERVICES; PETROLEUM; PRISONS, PAROLE, AND CRIME, PSYCHOLOGY (testing of recruits); SELECTIVE SERVICE ADMINISTRATION; SOCIETIES under *United Service Organizations*, etc. For army appropriations see UNITED STATES under *Legislation* For the establishment of State Guards, see the articles on the States under *Legislation* For the building and equipping of Army camps, see ARCHITECTURE under *Defense Housing*, CIVILIAN CONSERVATION CORPS, CONSTRUCTION INDUSTRY, GEOLOGICAL SURVEY, LIBRARY PROGRESS; PUBLIC HEALTH SERVICE; WATER WORKS, WORK PROJECTS ADMINISTRATION.

LEROY WHITMAN.

MILK. See DAIRYING. For synthetics from milk, see CHEMISTRY, INDUSTRIAL under *Textiles*.

MINERALS AND METALS. For production, see BUSINESS REVIEW and the articles on States and countries under *Mineral Production*; also, the separate articles on the following: ALUMINUM, ANTIMONY, ASBESTOS, CADMIUM, CHROMIUM, COAL AND COKE, COPPER, GOLD, IRON AND STEEL, IRON ORE, LEAD, MAGNESIUM, MANGANESE, MERCURY, MOLYBDENUM, NICKEL, PETROLEUM, PLATINUM, POTASH, SILVER, SULPHUR, TIN, TUNGSTEN, ZINC. See CHEMISTRY, INDUSTRIAL, CUSTOMS, BUREAU OF; GEOLOGICAL SURVEY; MINES, BUREAU OF, STRATEGIC AND CRITICAL MATERIALS. Compare MINES.

MINES, Bureau of. Fortified by 31 years experience in the conservation and development of the Nation's mineral resources and the protection of life in the mineral industries, the Bureau of Mines, U.S. Department of the Interior, readily adjusted itself to emergency conditions in 1941 and shifted the emphasis on all its work to aid in successful prosecution of the war.

At the beginning of the defense program much of the Bureau's vast storehouse of factual information and scientific and technologic data was applied to the problem of bringing the United States nearer to self-sufficiency in vital minerals—the foundation stone of our defense structure. The year 1941, ending with America's entrance into World War II, saw an even greater expansion of the Bureau facilities in an all-out effort to contribute to an unimpeded supply of strategic, critical and essential minerals, including solid fuels and petroleum, and to conservation of manpower through accident prevention.

Designated early as a national defense agency, the Bureau cooperated fully with the Army, the Navy, the State Department, the Office of Production Management, and other principal fighting and supply branches of the Federal Government, in many important undertakings.

Upon the declaration of the existence of a state of war, the Bureau was charged immediately with administration of the Federal Explosives Act which governs the manufacture, storage, distribution, trade, possession or use of non-military explosives. A system of licensing, designed to keep explosives and their ingredients from getting into the hands of hostile or disloyal persons or those not capable of handling explosives, was initiated. The Bureau drafted rules and regulations, undertook to appoint licensing officers in almost every county in the nation, selected inspectors, and otherwise commenced strict and efficient enforcement of this important defense measure.

Outstanding among the Bureau's accomplishments in 1941 directly relating to national defense were determination of new or additional sources of strategic minerals, together with development of improved methods for treating low-grade domestic ores of metals vital to the country's defense. More than 500 possible sources of antimony, chromite, manganese, mercury, tungsten, nickel and tin were investigated, and with the exception of the last two, the results of the examinations were satisfactory. A striking example of successful work was the discovery of a high-grade deposit of tungsten ore in Idaho, which now is rapidly being developed for commercial production. In another area, two million tons of chromite were added to our known reserves. Bureau experts also found deposits of antimony, mercury and manganese which, although of a low grade, are considered valuable in the war emergency.

Methods of treatment, beneficiation and recovery of low-grade domestic ores to render them available for pressing current needs were improved. A process for the production of high-purity manganese by the electrolytic method, developed by the Bureau beginning in 1935, was further improved, and preparations were made to produce manganese on a small commercial scale. Other metallurgical studies on the production of ferro-manganese from the abundant, low-grade manganese ores of this country revealed possibilities that the United States may be able to free itself from dependence upon foreign sources. Especially significant was the laboratory and pilot plant work on the large low-grade deposit of manganese in the Chamberlain, S.D., area, and on ores from other localities. The Bureau also developed a process for the production of magnesium, a metal greatly in demand by aircraft industries, and this work was expanded during the year. Several pilot plants to serve as guides for possible future production of strategic materials from low-grade ores were constructed under the Bureau's direction.

The Bureau operates the only helium plant in the world, and the production of this lightweight, non-inflammable gas was stepped up to 16¼ million cubic feet in the fiscal year 1941, with 15 million feet being used by the Government, primarily for military and defense purposes. At the end of the calendar year the production rate was almost doubled and by the drilling of additional wells and expansion of plant facilities production capacity is expected during 1942 to reach 36 million cubic feet annually.

Realizing the importance of high-test gasoline for airplane and other mechanized equipment in

time of war, the Bureau surveyed certain petroleum fields in this country, and by testing the various crude oils and their light distillates, discovered potential new sources of aviation gasoline. A study was made of the location, type and capacity of existing oil refineries in relation to national defense. The Bureau further improved its methods of producing gasoline, oil, and other products from domestic coals by hydrogenation.

Investigations of materials such as clays, graphite, and high-temperature refractories were made, and possible substitutes for materials normally imported from abroad were found in the cases of graphite, special clays, mica, and kyanite. An intensified effort to treat domestic low- or off-grade bauxites for production of aluminum was launched. A survey of Western coals disclosed that coals mined in Washington, Oklahoma and Kansas could be used for making coke to supply the growing iron and steel and other metallurgical industries of the West.

To implement the Bureau's methods of reducing injuries and fatalities in coal mines—an important undertaking because of the demand for uninterrupted production of coal for defense industries—the Bureau began administration of the Federal Coal Mine Inspection Act of 1941. More than 100 coal mine inspectors were selected and trained to go into the field after Jan. 1, 1942, to inspect and investigate conditions and practices in coal mines, and to recommend ways to improve health and safety factors. The threefold aim is to reduce loss of life and limb, lighten the economic burden of mine accidents, and permit a maximum production of coal for defense needs.

First-aid training, of great importance in civilian defense at this time, was given by the Bureau to nearly 100,000 persons, raising the total who have received first-aid certificates to more than 1,500,000. In addition, about 75,000 persons have received instruction in the use of gas masks and other breathing apparatus. During the year the Bureau investigated mine fires and explosions as usual, reporting in detail on the probable causes and effects. Investigations of explosibility of metal dusts was continued, and as part of this work, the Bureau recommended methods for extinguishing magnesium fires and incendiary bombs in plants.

Government defense agencies and private firms concerned with defense drew upon the Bureau's reservoir of economic and statistical facts for data on the amounts and trends of production, consumption, prices, stocks, technologic progress, world conditions and international trade, for more than 100 metal and other mineral commodities. Many special and expanded surveys were made to supply demands for up-to-the-minute information.

Although the Bureau was engaged almost wholly in defense work, the staff endeavored to carry on as fully as possible the regular duties designed to provide a more efficient and economical mining, preparation and utilization of the Nation's mineral resources. The Bureau's watchwords have been "National defense and conservation of vital resources." In 1942 it will deliver 100 per cent effort to help our Nation to win the war.

R. R. SAYERS.

MINES AND MINING. See LABOR CONDITIONS under *Strikes*; MINES, BUREAU OF; TUNNELS. FOR **MINE INSPECTION** see LABOR LEGISLATION.
MINIMUM WAGE. See under **WAGES.**

MINNESOTA. A west north central State. Area: 84,068 sq. mi., including 4,059 sq. mi. of inland water,

but excluding part of Lake Superior, 2,212 sq. mi. Population: (1940 census) 2,792,300. The urban population comprises 49.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 0.8 per cent (U.S. average, 10.2); elderly (65 years and over), 7.6 per cent. Minnesota ranks 11th among the States in area, 18th in population, and 31st in density, with an average of 34.9 persons per square mile. The capital is Saint Paul with 287,736 inhabitants; largest city, Minneapolis, 492,370. There are 87 counties and 15 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. There were 531,781 pupils enrolled in the public schools of Minnesota during the school year 1939-40, 333,017 in elementary schools, 188,718 in secondary schools, 7,106 as special students, and 2,940 in junior colleges. Teachers numbered 22,252 and received an annual average salary of \$693 in the ungraded elementary schools and \$1,440 in the graded elementary and secondary schools. Total expenditures for the year were \$58,420,911—\$45,373,826 for maintenance, \$7,758,454 for capital outlay, and \$5,288,631 for debt service.

Transportation. State highway mileage in 1939, including streets under State control, totaled 11,328, of which 11,242 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 879,862; 746,289 were private and commercial automobiles, 599 busses, and 124,463 trucks and tractor trucks. Gross motor-fuel consumption was 593,842,000 gallons. Net motor-fuel receipts were \$18,526,000, the rate being three cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$10,305,000.

Railways of all classes extended 8,458 miles (Dec. 31, 1939) 3.60 per cent of the total mileage in the United States. Class I steam railways (7,895 miles) reported 67,991,599 tons of revenue freight originating in Minnesota in 1940 and 21,617,111 tons terminating in Minnesota. There are 29 airports and landing fields in the State (nine lighted fields) and seven seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 551 civil aircraft in the State and 1,764 airline transport, commercial, and private pilots (private 1,435).

Agriculture. Acreage harvested in principal crops in 1941 totaled 18,775,600, as compared with 19,153,000 acres in 1940. According to the latest census, there are 197,351 farms, valued at \$1,443,021,290, averaging 165.2 acres each. Farm population numbered 915,230 or 32.8 per cent of the total. Leading crops with production in 1941 were: corn, \$123,634,000; oats, \$40,607,000; hay, \$34,881,000; soybeans, \$16,019,000; flaxseed, \$25,704,000; wheat, \$20,301,000; potatoes, \$9,632,000.

Manufacturing. According to the 1939 Census of Manufactures, there were 4,008 manufacturing establishments in Minnesota, employing 79,753 wage earners who received \$96,886,925 in wages for the year. The total value of products was \$845,771,514; value added by manufacture, \$310,628,396.

Mineral Production. Iron ore is Minnesota's important mineral product, production in 1940 amounted to almost two-thirds of the United States total, 47,904,137 gross tons valued at \$118,947,968 (32,370,241 gross tons, \$97,113,591, in 1939). The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$106,427,607 or 2.51 per cent of the total for the United States.

Minnesota ranks 12th among the States in value of mineral production.

Trade. According to the 1940 census there were 6,460 wholesale establishments in Minnesota, employing 37,523 persons, reporting net sales for 1939 of \$1,458,228,000 and annual pay roll of \$60,716,000. There were 40,448 retail stores with 106,282 employees, reporting sales of \$1,017,195,000 and pay roll of \$104,204,000. Service establishments numbered 14,063, employing 18,606 persons for \$18,111,000 per year, and reporting a business volume amounting to \$63,963,000. The leading business center of the State is Minneapolis which reported wholesale sales of \$716,894,000, retail sales of \$269,391,000, and \$24,216,000 receipts for its service establishments. St Paul reported sales of \$131,228,000 wholesale, \$167,691,000 retail, and \$11,787,000 for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Minnesota was \$67,714,000. Under the Social Security program, financed by Federal funds matching State grants, 63,081 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$21.39 (U.S. average pension, \$21.08), 22,284 dependent children in 9,398 families received average monthly payments of \$34.16 per family (U.S. average, \$32.73); and 975 blind persons received \$26.87 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 23,303 and received \$20.48 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 4,447 (\$295,000); NYA student work program, 9,084 (\$61,000); NYA out-of-school work program, 8,254 (\$175,000); WPA, 36,941 (\$2,103,000); regular Federal construction projects, 4,451 (\$429,000). The Farm Security Administration certified subsistence payments totaling \$49,000 for the month to 1,075 cases.

Legislation. The Legislature convenes in regular session on Tuesday after the first Monday of January in odd years. It is composed of 67 Senators and 131 Representatives, elected without party designation.

Legislation in 1941. At the close of the 90-day session of the Minnesota Legislature, M. W. Halloran commented as follows in the Minneapolis *Star Journal*, Apr. 24, 1941:

The legislators started the session on Jan. 7 without any very definite idea of where they were going. And that's where they arrived when time came today to ring down the curtain.

Every Stassen law of 1939 stands with only slight modifications of one or two. And that in the face of pre-session loud talk about "what we're going to do to some of those laws" by critics of the governor.

Almost the entire membership from the districts outside the three big cities of Minneapolis, St. Paul, and Duluth, came to St. Paul with at least one main objective. That was to put through an increase of the gasoline tax from three cents to four cents for the benefit of the secondary roads. Efforts of this gas bloc to enact this measure—in the face of the governor's coolness and insistence of powerful members that repeal of the one-mill road tax on property be voted as an offset—was marked by many a spectacular and bitter debate. But the 4-cent gas tax was voted. And members CAN point to that as a decided victory.

It was about a standoff between the liquor bloc and the temperance bloc—the one heading off wet bills, the other preventing dry legislation—though there were more measures of this type than in any session for years.

The bitterest fight of the entire session was that over the bill to limit tank trucks to 3,000-gallon loads on the highways. The measure—denounced as a railroad measure, supported as a safety measure—had many lives. It was brought up in one form or another at least three times

and angrily debated for hours each time. In the end it was cast aside and allowed to die quietly.

One of the outstanding features of the session was the successful fight waged by the minority against the so-called "Grapes of Wrath" bill, the measure providing compulsory deportation of non-resident poor from the state. That and the affirmative victory in upping the iron ore tax to 15 per cent (even though this was rubbed out by the senate) were the two main accomplishments of the minority. No little furor was stirred up by the anti-fireworks bill and one of the most active and persistent lobbies of the session had to be beaten back to get it through. Lobbyists, by the way, were thicker and more urgent than had been the case for some years. A fact that added not a little to the annoyance of legislators and helped bring about the chaotic situation of the closing days of the session.

Other measures passed included the first Bank Tax Act since 1926, providing for an eight per cent income levy; establishment of Susan B. Anthony Day, February 15, and "I Am an American Day" on the third Sunday in May; proposal for a constitutional amendment on repeal of the State tax on real and personal property, to be voted on in 1942; legalization of crude oil tractor fuel, tax free, but not to be used on highways; a Motion Picture Regulation Bill requiring that producers and distributors of films allow exhibitors to cancel up to 20 per cent of the films offered on moral, racial, or religious grounds, recodification of educational laws, a bill outlawing common law marriages by requiring that, to be valid, marriage licenses must be secured; prohibiting consolidated income tax returns by corporations; permitting payment of State income tax in four installments; imposing life sentence for fatal rape; permitting minors in bowling alleys.

Finances. Total tax collections in Minnesota for the fiscal year ending in June, 1941, were \$92,059,000 (1940: \$89,470,000). Total sales taxes amounted to \$24,037,000, including motor fuel, \$18,879,000, alcoholic beverage, \$5,158,000. Taxes on specific businesses ran to \$10,854,000, general and selective property, \$13,725,000, unemployment compensation, \$11,041,000. The net income taxes were \$12,758,000. Cost payments for the operation of general government totaled \$97,797,000 in 1939, the latest year available. (Revenues for the general government for that year were \$122,971,000.) Cost of operation per capita was \$35.42. Total gross debt outstanding in 1941 was \$112,818,000, as compared with \$98,162,000 in 1932.

Officers and Judiciary. The Governor is Harold E. Stassen (Rep.), inaugurated in January, 1941, for his second two-year term; Lieutenant Governor, C. Elmer Anderson; Secretary of State, Mike Holm; Attorney General, J. A. A. Burnquist; State Treasurer, Julius A. Schmah; State Auditor, Stafford King. Chief Justice of the Minnesota Supreme Court is Henry M. Gallagher, there are six associate members elected by popular vote for six-year terms.

See COMMUNISM; CONSUMERS' COOPERATIVES, FIRE PROTECTION; LABOR LEGISLATION; PLANNING, ROADS AND STREETS.

MINORITIES. See ARGENTINA, BELGIUM, BRAZIL, BULGARIA, CANADA, CZECHOSLOVAKIA, HUNGARY, PERU, POLAND, RUMANIA, SLOVAKIA, SOUTH AFRICA, UNION OF SOVIET SOCIALIST REPUBLICS, and YUGOSLAVIA; FASCISM; REFUGEES.

MIQUELON ISLANDS. See ST. PIERRE AND MIQUELON.

MISSIONS, Foreign. See the articles on the churches.

MISSISSIPPI. An east south central State. Area: 47,716 sq. mi., including 296 sq. mi. of inland water, but excluding Gulf of Mexico coastal waters, 556 sq. mi. Population: (1940 census) 2,183,796. The urban population comprises 19.8 per cent of the total (U.S. average, 56.5 per cent); non-white pop-

ulation, 49.5 per cent (U.S. average, 10.2); elderly (65 years and over), 5.2 per cent. Mississippi ranks 31st among the States in area, 23rd in population, and 25th in density, with an average of 46.1 persons per square mile. The largest city and capital is Jackson with 62,107 inhabitants. There are 82 counties and 12 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS

Education. According to J. S. Vandiver, Superintendent of Education, there were 610,150 pupils enrolled in the public schools of Mississippi during the school year 1940-41, 533,467 in elementary schools and 76,683 in secondary schools. Teachers numbered 16,112 and received an annual average salary of \$580. Total expenditures for the year were \$14,380,734.01. For higher education, see *Mississippi* in the table of UNIVERSITIES

Transportation. State highway mileage in 1939, including streets under State control, totaled 6,106, of which 6,090 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 264,439, 196,473 were private and commercial automobiles, 1,608 busses, and 60,927 trucks and tractor trucks. Gross motor-fuel consumption was 214,538,000 gal. Net motor-fuel tax receipts were \$11,931,000, the rate being six cents per gal. (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$3,009,000

Railways of all classes extended 3,921 miles (Dec. 31, 1939) 1.67 per cent of the total mileage in the United States. Class I steam railways (2,866 miles) reported 7,413,225 tons of revenue freight originating in Mississippi in 1940 and 6,151,108 tons terminating in Mississippi. There are 33 airports and landing fields in the State (14 lighted fields) and three seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 148 civil aircraft in the State and 663 commercial and private pilots (574 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 7,297,000, as compared with 7,247,000 acres in 1940. According to the latest census, there are 291,092 farms, valued at \$474,986,062, averaging 65.8 acres each. Farm population numbered 1,405,749 or 64.4 per cent of the total. Leading crops with production in 1941 were: Cotton lint, \$126,380,000, 1,420,000 bales; corn, \$37,929,000, 51,255,000 bu.; cottonseed, \$31,523,000, 633,000 tons, hay, \$13,395,000, 1,280,000 tons; sweet potatoes, \$6,460,000, 6,460,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 1,294 manufacturing establishments in Mississippi, employing 46,355 wage earners who received \$27,437,088 in wages for the year. The total value of products was \$174,937,294; value added by manufacture, \$73,462,419.

Mineral Production. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$5,192,156, less than two-tenths per cent of the total for the United States; natural gas accounted for more than half of the total.

Trade. According to the 1940 census there were 1,425 wholesale establishments in Mississippi, employing 7,028 persons, reporting net sales for 1939 of \$245,154,000 and annual pay roll of \$8,182,000. There were 18,032 retail stores with 32,514 employees, reporting sales of \$282,440,000 and pay roll of \$22,735,000. Service establishments numbered 6,389, employing 11,991 persons for \$6,261,000 per year, and reporting a business volume amounting to \$20,834,000. The leading business center of the State is Jackson which reported whole-

sale sales of \$37,098,000, retail sales of \$29,093,000, and \$2,432,000 receipts for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Mississippi was \$26,399,000. Under the Social Security program, financed by Federal funds matching State grants, 26,621 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$8.76 (U.S. average pension, \$21.08); 2,713 dependent children in 999 families received average monthly payments of \$20.57 per family (U.S. average, \$32.73), and 1,071 blind persons received \$8.66 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 745 and received \$3.77 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 6,919 (\$458,000); NYA student work program, 4,261 (\$30,000); NYA out-of-school work program, 7,685 (\$144,000); WPA, 28,483 (\$1,245,000); other Federal emergency projects, 19 (\$1,000); regular Federal Construction projects, 15,966 (\$1,699,000) The Farm Security Administration certified subsistence payments totaling \$10,000 for the month to 370 cases.

Legislature. The Legislature convenes in regular session on Tuesday after the first Monday of January in even years. (There was no session in 1941) It is composed of 49 Senators (all Democrats) and 140 Representatives (139 Democrats and one vacancy in 1941). The President of the Senate is Dennis Murphree, President Pro Tem, W. B. Roberts; Speaker of the House, Sam Lumpkin.

Finances. Total tax collections in Mississippi for the fiscal year ending in June, 1941, were \$37,685,000 (1940: \$35,185,000). Total sales taxes amounted to \$24,692,000, including motor fuel, \$13,095,000, general sales, \$7,407,000. Taxes on specific businesses ran to \$3,005,000, general and selective property, \$2,583,000, unemployment compensation, \$2,881,000. The net income taxes were \$2,639,000. Cost payments for the operation of general government totaled \$27,316,000 in 1939 the latest year available (Revenues for the general government for that year were \$39,813,000.) Cost of operation per capita was \$12.65. Total gross debt outstanding in 1941 was \$83,746,000, as compared with \$36,504,000 in 1932.

Officers and Judiciary. The Governor is Paul B. Johnson (Dem.), inaugurated in January, 1940, for a four-year term; Lieutenant Governor, Dennis Murphree; Secretary of State, Walker Wood, Attorney General, Greek L. Rice; State Treasurer, Lewis S. May; State Auditor, J. M. Causey. Chief Justice of the Mississippi Supreme Court is Sidney Smith, there are five associate members elected by popular vote for eight-year terms.

MISSOURI. A west north central State. Area: 69,674 sq. mi., including 404 sq. mi. of inland water. Population (1940 census): 3,784,664. The urban population comprises 51.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 6.5 per cent (U.S. average, 10.2); elderly (65 years and over), 8.6 per cent. Missouri ranks 18th among the States in area, 10th in population, and 21st in density, with an average of 54.6 persons per square mile. The capital is Jefferson City with 24,268 inhabitants; largest city, St. Louis, 816,048. There are 114 counties and 22 cities of more than 10,000 inhabitants (see article on POPULATION in 1940

YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Lloyd W. King, Superintendent of Public Schools, there were 692,703 pupils enrolled in the public schools of Missouri during the school year 1940-41, 505,253 in elementary schools and 187,450 in secondary schools. Teachers numbered 26,266; average annual salaries for white men and women in high schools were \$1,618 and \$1,412 respectively; in elementary schools \$870 and \$960. Total expenditures for the year were \$55,374,776.40. For higher education see *Missouri* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 15,533, of which 15,353 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 926,715; 768,345 were private and commercial automobiles, 3,429 busses, and 150,026 trucks and tractor trucks. Gross motor-fuel consumption was 697,545,000 gallons. Net motor-fuel tax receipts were \$13,455,000, the rate being two cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$10,750,000.

Railways of all classes extended 7,076 miles (Dec. 31, 1939) 3.01 per cent of the total mileage in the United States. Class I steam railways (6,542 miles) reported 16,125,705 tons of revenue freight originating in Missouri in 1940 and 20,817,083 tons terminating in Missouri. There are 38 airports and landing fields in the State (19 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 616 civil aircraft in the State and 2,680 airline transport, commercial, and private pilots (2,103 private). See FLOODS.

Agriculture. Acreage harvested in principal crops in 1941 totaled 11,970,000, as compared with 12,204,000 acres in 1940. According to the latest census, there are 256,100 farms, valued at \$1,107,302,598, averaging 135.6 acres each. Farm population numbered 1,126,871 or 29.8 per cent of the total. Leading crops with production in 1941 were: Corn, \$83,780,000, 113,216,000 bu.; cotton lint, \$41,650,000, 490,000 bales; hay, \$32,754,000, 3,554,000 tons; oats, \$19,587,000, 52,938,000 bu.; wheat, \$18,397,000, 18,936,000 bu.; cottonseed, \$9,766,000, 218,000 tons.

Manufacturing. According to the latest census of Manufactures (covering the year 1939) the total value of manufactured products was \$1,388,056,267. For details, see 1940 YEAR BOOK.

Mineral Production. Leading mineral products in 1940 were (with 1939 figures in parentheses): Lead, 172,052 short tons (156,281 short tons valued at \$14,690,414); cement, 4,867,799 bbl. valued at \$7,616,247 (4,702,259 bbl., \$7,420,013); coal, 1940 figure included with Kansas, (q.v.) (3,275,000 short tons valued at \$6,124,000 in 1939); stone, 6,085,790 short tons, \$6,176,867 (3,958,470 short tons, \$4,589,986). The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$45,619,104 or 1.08 per cent of the total for the United States.

Trade. According to the 1940 census there were 7,649 wholesale establishments in Missouri, employing 64,373 persons, reporting net sales for 1939 of \$2,261,256,000 and annual pay roll of \$106,362,000. There were 53,196 retail stores with 132,583 employees, reporting sales of \$1,102,503,000 and pay roll of \$119,237,000. Service establishments numbered 20,498, employing 34,832 persons for \$31,378,000 per year, and reporting a business volume amounting to \$98,936,000. The leading business center of the State is St. Louis which reported

wholesale sales of \$1,164,102,000, retail sales of \$353,860,000, and \$43,939,000 receipts for its service establishments. Kansas City reported sales of \$762,069,000 wholesale and \$224,986,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Missouri was \$82,843,000. Under the Social Security program, financed by Federal funds matching State grants, 113,787 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$17.93 (U.S. average pension, \$21.08); 32,297 dependent children in 13,937 families received average monthly payments of \$29.76 per family (U.S. average, \$32.73); and an estimated 3,200 blind persons received (without Federal aid) an approximate total payment of \$84,000. General relief cases, which are supported by State and local funds only, numbered 19,879 and received \$13.32 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 7,493 (\$496,000); NYA student work program, 8,088 (\$57,000); NYA out-of-school work program, 14,874 (\$275,000); WPA, 51,871 (\$2,907,000); other Federal emergency projects, 111 (\$10,000); regular Federal construction projects, 22,987 (\$3,511,000). The Farm Security Administration certified subsistence payments totaling \$32,000 for the month to 1,384 cases.

Legislation. The General Assembly convenes in regular session on Wednesday after January first in odd years. It is composed of 34 Senators (28 Democrats and 5 Republicans in 1941 with one seat contested) and 150 Representatives (85 Democrats and 65 Republicans). The 61st General Assembly, in session for a little over six months, was distinguished rather for its omissions than for its enactments. Thirty-six constructive recommendations had been placed before it by retiring Governor Stark, Democrat, and incoming Governor Donnell, Republican; of these 20 were either ignored, defeated, or killed in committee.

Measures enacted included the following: Provision for a secret ballot; provision that the Board of Health comply with Federal standards, creation of a Commission on Interstate Cooperation (the Truck Fee reciprocity bill, also aimed at elimination of interstate trade barriers, was killed); appropriation of \$100,000 for activities for the blind, doing away with the surplus in the blind pension fund, virtual limitation of appropriations to revenues; provision for secrecy of old-age assistance records; appropriation of \$150,000 for the Missouri National Guard, authorizing training of volunteer reserves with Federal aid; a bindweed eradication law; creation of a State Council of Defense; submission of a constitutional amendment to set the pay of legislators at \$1,500 a year; tightening the qualifications for State liquor inspectors with the bi-partisan requirement; health and housing legislation.

Defeated measures included a teachers' pension law for large cities, a survey of the State government, investigation of alleged padding in social security rolls, limit of tenure of State executive officers to one term. Proposals for reform of the criminal code, as recommended by the State Bar Association, revision of the State constitution, change of the fiscal year, legalizing the use of ballots in judicial inquiry, amelioration of the State printing racket, and a soil conservation bill were among the measures which never left the committees for action. Altogether ignored were the problems of reapportionment of legislative seats, a general State merit system, consolidation of tax

collection agencies, and abolition of the "lug" (enforced political contributions).

Finances. Total tax collections in Missouri for the fiscal year ending in December, 1940, were \$92,825,000. Total sales taxes amounted to \$41,724,000, including general sales, \$23,019,000, motor fuel, \$13,904,000. Taxes on specific businesses ran to \$6,071,000, general and selective property, \$5,233,000, unemployment compensation, \$19,688,000. The net income taxes were \$6,945,000. Cost payments for the operation of general government totaled \$76,611,000 in 1939, the latest year available. (Revenues for the general government for that year were \$114,591,000.) Cost of operation per capita was \$20.32. Total gross debt outstanding in 1941 was \$95,650,000, as compared with \$105,162,000 in 1932.

Officers and Judiciary. The Governor is Forrest C. Donnell (Rep.), inaugurated in January, 1941, for a four-year term; Lieutenant Governor, Frank G. Harris; Secretary of State, Dwight H. Brown, Attorney General, Roy McKittrick; State Treasurer, Wilson Bell; State Auditor, Forrest Smith. Chief Justice of the Missouri Supreme Court is C. A. Leedy, Jr.; there are six associate members elected by popular vote for 10-year terms.

MOLDAVIAN SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS, under *Area and Population*.

MOLLUSKS. See ZOOLOGY.

MOLOTOV BREADBASKETS. See BOMBS.

MOLUCCA ISLANDS. See NETHERLANDS INDIES under *Area and Population*.

MOLYBDENUM. Molybdenum, called "moly" in the steel industry, is the only one of the five vital steel-alloying elements which the United States possesses and produces in plenty. More and more of it is being substituted for the scarce strategic metals (chromium, tungsten, nickel) to make hard steel for high-speed tools, armor plate, cannon and cannon mounts, rifle barrels, truck, plane, and tank parts, and other war requirements. "Moly" is a whitish metal which not only makes steel tougher, but also increases its elastic limit and its resistance to impact and abrasion. Molybdenum steels began to be recognized during the first World War. They have been used to some extent in aircraft construction for the last ten years, but are attaining greater and greater favor.

With chromium and tungsten imports from the Philippines and China dwindling to the vanishing point in 1941-42, and the demand for molybdenum for both war and non-war uses rapidly growing, the government made regulations increasing the substitution of molybdenum steels everywhere except in certain imperative government high-speed steels. In June, 1941, the OPM ordered all buyers of high-speed tungsten tool-steels to take half their requirements in molybdenum steels; by the end of the year 75 per cent of the orders filled had to be of the molybdenum type.

When the President of the United States in December, 1939, put a "moral embargo" on the export of airplanes and materials used in aircraft construction to all nations guilty of the bombing of civilians from the air, molybdenum was put on the embargo list. It was not listed with the strategic metals in 1941 because the United States still had abundant supplies; but it continued to gain in importance because of the increasing demand for it as a substitute for the strategic alloying elements. The nations consuming United States molybdenum in 1941, in addition to the United States, were

Canada, Great Britain, and Russia. The only molybdenum supply known to be available to the Axis powers is the Knaben mine in Norway, which was producing about 1,000,000 lb. a year before the German occupation. No data has come from Norway since then.

Domestic production of molybdenum rose to about 40,000,000 lb. in 1941, a figure which overtopped 1940's peak of 34,313,000 lb. by almost 6,000,000 lb. The United States produces about 93 per cent of all molybdenum produced in the world. And the Climax Molybdenum Company's big mine in Colorado on the Continental Divide is the principal producer. In 1941 this mine brought forth 32,000,000 lb., an amount equal to the world's total production in any previous year. The Climax Company enlarged its plant facilities during the year, and expected to reach a 37,000,000-lb. yearly capacity in May, 1942, when the new mill unit will be ready for operation. Climax estimated its ore reserves at the end of 1941 at 200,000,000 tons of ore, which, with the yield estimated at 10-11 lb. per ton of ore, would contain about one billion lb. of molybdenum. The other 13,000,000 lb. of United States molybdenum not supplied by Climax were produced as a by-product of copper-mining in Utah and of the tungsten and lead production in California and Arizona.

Exports of molybdenum ore and concentrates dropped 71 per cent in 1940 to 6,684,714 lb. contained molybdenum. Exports in 1941, January-September, amounted to 4,778,419 lb. The total for the year would be about the same as the 1940 figure. No imports were recorded for 1940 or 1941. The price for molybdenum ore throughout 1941 remained at 45¢ a lb. contained MoS₃ for 90 per cent concentrates. See GEOLOGICAL SURVEY.

MONACO. A Mediterranean principality surrounded on its land sides by the French department of Alpes-Maritimes. Area, 370 acres; population (1939), 23,973. Chief towns: Monaco (capital), La Condamine, Monte Carlo. During peacetime the main sources of revenue were the tourist traffic and the gambling concession at Monte Carlo. Budget (1939): 38,892,921 francs (franc averaged \$0.0251 for 1939). A ministry assisted by a council of state administers the country under the authority of the Prince. Legislative power rests with the Prince and the national council of 12 members elected by universal suffrage for a four-year term. Ruler, Prince Louis II (succeeded June 26, 1922).

MONETARY UNITS. See the countries under *Finance; BANKS AND BANKING*.

MONGOLIA. An extensive, vaguely defined region of east-central Asia, bordered by the Soviet Union and Tannu Tuva on the north, Manchuria on the east, China proper on the south, and Sinkiang (Chinese Turkestan) on the west. It is divided by an irregular east-west line through the Gobi desert into Outer Mongolia, on the north, and Inner Mongolia, on the south.

Inner Mongolia. Following the establishment of the puppet state of Manchoukuo in Manchuria in 1931, the Japanese added to it the Inner Mongolian Province of Jehol in 1935 and the six northern counties ("hsien") of the Inner Mongolian Province of Chahar in 1936. The Inner Mongolian area remaining under direct Chinese jurisdiction then consisted of the 10 southern counties of Chahar and the provinces of Suiyuan and Ningsia. Beginning in 1937 the Japanese occupied this part

of Chinese Inner Mongolia to a point west of Paotow, the western terminus of the Peiping-Suiyuan Railway.

With the cooperation of some Mongol and Chinese leaders, the Japanese established at Kalgan on Nov. 22, 1937, the so-called Federated Council of Meng Chiang under the leadership of Prince Teh Wang, leader of the "young Mongol" movement and a lineal descendant of Genghis Khan. The Council assumed general supervisory functions over Chinese and Mongol communities within the 10 southern counties of Chahar, practically all of Suiyuan, and 13 counties in northern Shansi Province of China proper. This region was divided into "federal autonomous governments" as follows: (1) United Leagues of Mongolia (capital, Kweisui—renamed Hohohoto by the Japanese), comprising the leagues (banners) of Ulanchab, Yegkejo (Yekhejo), Payental, Silingol, and Chahar; (2) Chin-Pei (North Shansi), with its capital at Tatumg; and (3) South Chahar, with its capital at Kalgan. On Sept. 1, 1939, the Meng Chiang Federated Council was reorganized as the "Federal Autonomous Government of Mongolia."

The area under the jurisdiction of the Japanese-protected "government" at Kalgan in 1941 was approximately 200,000 square miles, with a population of 5,000,000 to 7,000,000 Chinese and Mongols and about 36,000 Japanese civilians. There were a few European missionaries, traders, and railway guards. Stock raising and agriculture are the chief occupations and rye, potatoes, buckwheat, and wheat are the main crops. The once active caravan trade with Outer Mongolia and Central Asia was cut off and Inner Mongolia's foreign commerce during 1937-41 was confined largely to the Japanese-controlled districts of China.

The Japanese imposed increasingly severe restrictions on trade, travel, prices, and foreign-exchange transactions. Coupled with rapid currency and credit inflation, these developments were reported in 1941 to have caused a marked decline in all economic activities. A considerable quantity of cultivated land was allowed to revert to pasture. Forced sales at officially fixed low prices allegedly kept products of the nomadic Mongol herdsmen and Chinese farmers away from the railway centers. Inner Mongolian exports passing over the Peiping-Suiyuan Railway during 1940 were reported at 113,308,000 Meng Chiang yuan against imports of 157,700,000 yuan, leaving a visible import excess of 41,398,000 yuan. (Meng Chiang yuan equals Japanese yen at par.)

The Japanese established the Meng Chiang Bank at Kalgan as the keystone of their new currency and banking system. The note issue of the bank rose from 12,966,000 yuan in December, 1937, to 70,886,000 in July, 1940. In the same period reserves declined from 76.9 to 28.7 per cent of the notes in circulation. The bank's ratio of loans and investment to deposits rose from 109.8 in July, 1939, to 199.0 in July, 1940. The Japanese have built strategic highways into Inner Mongolia and on June 1, 1940, opened direct telephone service between Kalgan and Japan.

Outer Mongolia. A Chinese estimate placed the area of Outer Mongolia at 625,946 square miles and the population at 2,077,669. A British estimate gives the population as 540,000, a Japanese estimate as 840,000. Ninety per cent of the inhabitants are Mongols, chiefly nomads, and the rest Russians and Chinese. The capital, Ulan Bator Khoto (Urga), has about 70,000 population; Altanblak, 20,000.

Outer Mongolia is a soviet republic, the independence of which is guaranteed by the Soviet Union under a mutual assistance pact signed Mar. 12, 1936. However the Soviet Union in 1924 recognized the suzerainty of the Chinese Republic over the region. The political and economic systems have been reorganized on the soviet model. Ownership of lands, forests, mineral resources, and factories has been collectivized. The foreign and domestic trade is a monopoly of People's Central Cooperative; foreign trade is carried on exclusively with or through the Soviet Union. Soviet instructors are said to have trained and equipped with modern arms a Mongol army of 250,000 men. The government is in the hands of the Mongolian People's Revolutionary Party. The only political party permitted, it had about 12,000 members in 1939 and was controlled by the Comintern. Supreme authority rests in an elective assembly (Great Huruldand), which meets at least once annually and while in recess delegates executive powers to a Little Huruldand of 30 members, which in turn appoints a Premier and executive committee.

Stock-raising, game hunting, agriculture, manufacturing, and mining, in the order named, are the chief occupations. Meat, milk products, hides and skins, wool, furs, wheat, rye, millet, and coal are the main products. Extensive mineral resources remain undeveloped. State factories, all erected since 1924, produce machinery, washed wool, wool textiles, felt, leather, sheepskin coats, shoes, and electric power.

The first railways in Outer Mongolia—connecting Ulan Bator Khoto with the Nalaha coal mine 22 miles distant and linking Kiakhta with the Trans-Siberian Railroad at Ulan Ude—were reported to have been completed in 1939. The capital is connected with Ulan Ude by truck road and airline. Steamers ply the Selenga and Orkhon Rivers. However caravans still handle the bulk of internal transport. There is a state banking and monetary system, the unit of currency being the tukrik containing 17 grams of pure silver.

For developments affecting Mongolia in 1941, see CHINA, JAPAN, MANCHOUKUO, and UNION OF SOVIET SOCIALIST REPUBLICS under *History*.

MONTANA. A mountain State. Area: 147,138 sq. mi., including 822 sq. mi. of inland water. Population: (1940 census) 559,456. The urban population comprises 37.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 3.4 per cent (U.S. average, 10.2); elderly (65 years and over), 6.3 per cent. Montana ranks third among the States in area, 39th in population, and 46th in density, with an average of 3.8 persons per square mile. There are 56 counties and six cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Elizabeth Ireland, Superintendent of Public Instruction, there were 107,254 pupils enrolled in the public schools of Montana during the school year 1940-41, 75,209 in elementary schools and 32,045 in secondary schools. Teachers numbered 5,195 and received an annual average salary of \$1,117.50. Total expenditures for the year were \$15,805,458. For higher education see *Montana* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 6,420, of which 5,491 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 196,116; 143,068 were private

and commercial automobiles, and 47,964 trucks and tractor trucks. Gross motor-fuel consumption was 137,639,000 gallons. Net motor-fuel tax receipts were \$5,074,000, the rate being five cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$1,721,000.

Railways of all classes extended 5,191 miles (Dec. 31, 1939) 2.21 per cent of the total mileage in the United States. Class I steam railways (5,027 miles) reported 5,977,607 tons of revenue freight originating in Montana in 1940 and 4,600,283 tons terminating in Montana. There are 75 airports and landing fields in the State (21 lighted fields) and one seaplane anchorage. On July 1, 1941, according to the Civil Aeronautics Authority, there were 167 civil aircraft in the State and 719 commercial and private pilots (640 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 6,526,000, as compared with 6,708,000 acres in 1940. According to the latest census, there are 41,823 farms, valued at \$350,178,461, averaging 1,110.7 acres each. Farm population numbered 175,271 or 31.3 per cent of the total. Leading crops with production in 1941 were: Wheat, \$59,368,000, 68,239,000 bu.; hay, \$15,365,000, 2,318,000 tons, oats, \$5,090,000, 14,544,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 585 manufacturing establishments in Montana, employing 9,170 wage earners who received \$12,148,428 in wages for the year. The total value of products was \$151,885,026, value added by manufacture, \$39,790,182.

Mineral Production. Leading mineral products are (with figures for 1941 except as otherwise noted): Copper, 255,000,000 lb. valued at \$29,835,000; gold, 246,500 fine ounces, \$8,627,500; zinc, 111,800,000 lb., \$8,496,800; silver, 11,304,000 fine ounces, \$8,038,400; natural gas (1939) 23,178,000 M cu. feet valued at \$6,486,000; petroleum (1940) 6,768,000 bbl., as compared with 5,960,000 bbl. valued at \$5,860,000 in 1939. As compared with 1940 copper production showed only a slight increase, 1 per cent, zinc increased 6 per cent, but gold and silver decreased 10 and 9 per cent respectively. The total value of mineral production in 1939, according to the U. S. Bureau of Mines, was \$63,354,645 or 15 per cent of the total for the United States. Montana ranks 18th among the States in value of minerals produced. See GEOLOGICAL SURVEY.

Trade. According to the 1940 census there were 1,336 wholesale establishments in Montana, employing 4,132 persons, reporting net sales for 1939 of \$130,584,000 and annual pay roll of \$6,130,000. There were 8,481 retail stores with 19,963 employees, reporting sales of \$222,008,000 and pay roll of \$21,505,000. Service establishments numbered 2,632, employing 2,522 persons for \$2,413,000 per year, and reporting a business volume amounting to \$10,358,000. The leading business center of the State is Butte which reported wholesale sales of \$24,452,000 and retail sales of \$25,080,000. Silver Bow County, including the city of Butte, is the leading county in the State in the volume of receipts for its service establishments (\$1,576,000). Billings reported sales of \$20,513,000 wholesale and \$18,576,000 retail; Great Falls, \$15,808,000 and \$20,422,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Montana was \$15,688,000. Under the Social Security program, financed by Federal funds matching State grants, 12,464 elderly persons were re-

ceiving (as of June, 1941) an average monthly old-age pension of \$20.35 (U.S. average pension, \$21.08); 6,411 dependent children in 2,643 families received average monthly payments of \$29.36 per family (U.S. average, \$32.73); and 260 blind persons received \$22.17 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 3,004 and received \$14.91 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earning for the month in parentheses): CCC, 1,511 (\$100,000); NYA student work program, 2,601 (\$16,000); NYA out-of-school work program, 1,602 (\$33,000); WPA, 8,415 (\$598,000); other Federal emergency projects, 52 (\$5,000); regular Federal construction projects, 2,251 (\$290,000). The Farm Security Administration certified subsistence payments to the amount of \$30,000 for the month to 835 cases.

Legislation. The Legislative Assembly convenes in regular session on the first Monday of January in odd years. It is composed of 56 Senators (35 Republicans and 21 Democrats in 1941) and 102 Representatives (47 Republicans and 55 Democrats). The legislative achievements of the 1941 Assembly were summarized as follows by the Montana Taxpayers' Association:

The 27th Legislative Assembly is to be congratulated on the completion of a constructive session in which it met the strong demands for increased financial support for public welfare, public schools, custodial institutions, and higher education without inflicting additional tax burdens on the people of the State of Montana.

In his message at the opening of the session Governor Ford definitely asserted that no new taxes or increased rates were necessary and emphatically stated that no legislation should be passed calling for expenditures that could not be financed out of present sources of revenue. At the same time he clearly and specifically indicated that the Legislature should give careful consideration to laws that might enable State government to function more efficiently and economically. . . .

For the first time in nearly ten years no bills were passed that started off with the declaration of an "emergency due to drought, severe unemployment, and economic depression." Notice was definitely served that there must be a tapering off in such legislation. At the same time quite a number of constructive laws were enacted that will insure more efficient and economic government procedure and organization.

Specific measures enacted included the following: Provision that all revenue go into the State general fund (eliminating the numerous special allocations which had made expenditure control difficult); authorizing the Governor, with an advisory committee, to study complete State reorganization; substituting for the three-man Highway Commission a five-man board with each member representing certain counties; reapportionment of the House of Representatives to consist of 90 members (which would save an estimated \$15,000 a year); liberalization of the unemployment compensation law (but not to an extent which would endanger reserve funds or require a higher tax); provision of \$7,100,000 for public welfare in the next two years and introduction of a new system for making relief grants to counties (in inverse proportion to their taxable valuation per capita instead of on the basis of need); amendments to the Public Welfare Act to conform to Federal laws and also to prevent county debts to the State, to relieve counties of most of the medical costs, and to increase resident requirements for general relief from six months to one year; a new city budget law which would make padding unnecessary and stabilize city tax levies; removal of abuses in apportioning school funds; authorizing a Montana State Guard, and creating an

eleven-member Preparedness and Advisory Commission to assist in the Federal defense program.

Finances. Total tax collections in Montana for the fiscal year ending in June, 1941, were \$16,304,000 (1940: \$14,954,000). Total sales taxes amounted to \$6,170,000, including motor fuel, \$5,373,000. Taxes on specific businesses ran to \$1,499,000, general and selective property, \$1,819,000, unemployment compensation, \$2,845,000. The net income taxes were \$1,276,000. Cost payments for the operation of general government totaled \$14,932,000 in 1939, the latest year available. (Revenues for the general government for that year were \$22,874,000) Cost of operation per capita was \$26.86. Total gross debt outstanding in 1941 was \$12,024,000, as compared with \$10,834,000 in 1932.

Officers and Judiciary. The Governor is Sam C. Ford (Rep.), inaugurated in January, 1941, for a four-year term; Lieutenant Governor, Ernest T. Eaton; Secretary of State, Sam W. Mitchell; Attorney General, John W. Bonner; State Treasurer, Thomas Carey; State Auditor, John J. Holmes. Chief Justice of the Montana Supreme Court is Howard Johnson; there are four associate members elected by popular vote for six-year terms.

MONTE CARLO. See MONACO.

MONTENEGRO. See YUGOSLAVIA under *History*.

MONTSERRAT. See LEEWARD ISLANDS.

MONUMENTS, National. See NATIONAL PARK SERVICE.

MORALE. See PSYCHIATRY, SOCIETIES AND ASSOCIATIONS.

MORAVIA. See BOHEMIA AND MORAVIA, CZECHOSLOVAKIA.

MORMONS. See LATTER-DAY SAINTS.

MOROCCO. A former Moslem empire of northwestern Africa, still under the nominal rule of a sultan, but divided since 1912 into French and Spanish protectorates. The city and district of Tangier on the Strait of Gibraltar was internationalized and demilitarized by a series of agreements beginning in 1906, but was incorporated in Spanish Morocco, over the protests of Great Britain and the United States, on Nov. 23, 1940 (see TANGIER). The Sultan resides in the French Zone, usually at Rabat, seat of the French administration. Capital of the Spanish Zone, Tetuán.

Area and Population. The area of French Morocco is estimated at 153,870 square miles. The population at the 1936 census was 6,298,528 (5,874,888 native Moslems, 173,533 French, 161,312 native Jews, and 59,058 other Europeans). Excluding Tangier, the Spanish Zone has an area estimated at 13,125 square miles and an estimated population (1936) of 795,202 (about 738,000 Moslems, 44,379 Europeans, 12,918 Jews). Populations of the chief cities of the French Zone (1936) were Casablanca, 257,430 (72,762 Europeans); Marrakech, 190,314 (6,849 Europeans); Fez, 144,424 (9,623 Europeans); Rabat, 83,379 (26,256 Europeans); Meknes, 74,702 (12,310 Europeans). In the Spanish Zone, the principal towns were: Tetuán, 49,535 (1936); Alcazar, 30,762; Larache, 29,477. The Spanish garrison towns of Ceuta (1936 pop., 38,945) and Melilla (64,328) on the African Mediterranean coast are not included in the protectorate. French and Spanish are the official and business languages in the French and Spanish Zones, respectively, but the natives speak mainly Moorish-Arabic and the various Berber dialects.

Production. Agriculture and stock raising are the chief occupations of the French Zone. Yields of the chief crops in 1939 were (in metric tons): Wheat, 1,055,000; barley, 2,128,000; oats, 76,000;

corn, 217,400 in 1938; olive oil, 8,000 in 1938. The wool clip in 1938 was 20,300 metric tons. Livestock in the same year included 10,152,000 sheep, 1,910,000 cattle, 191,000 horses, 775,000 mules and asses, 147,000 camels, and 5,800,000 goats. Output of the chief minerals in 1938 (metal content, in case of ores) was in metric tons: Coal, 123,000; natural phosphates, 1,447,000; manganese ore, 39,000; iron ore, 140,000; lead ore, 17,100; zinc ore, 2,500. Yield of sea fisheries, 1938, 30,300 metric tons, valued at 33,300,000 francs. Industries include flour mills, breweries, cement factories, soap works, sardine and tuna canning plants, Moorish handicraft.

The Spanish Zone raises much the same crops as the French Zone, but in limited quantities. Iron ore (805,000 metric tons in 1938), lead and some antimony are exported. Stock raising and tunny fishing are other occupations.

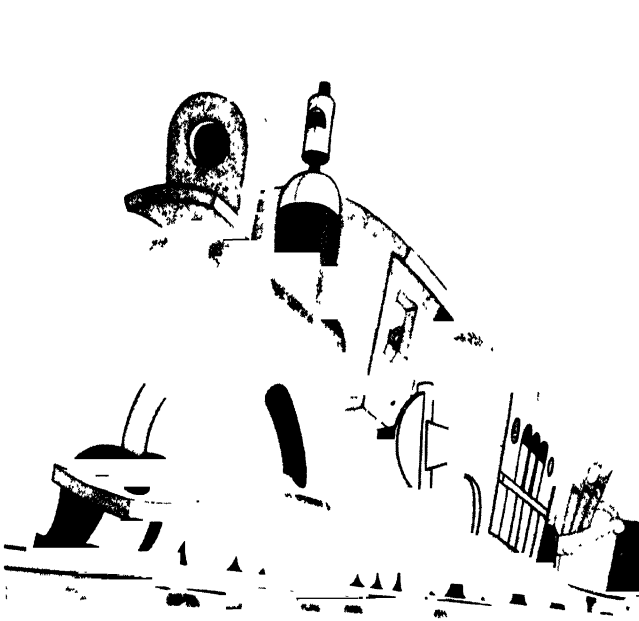
Foreign Trade. Publication of trade statistics for French Morocco was suspended upon the outbreak of the European War. Merchandise imports in 1938 were 2,184,900,000 francs; exports, 1,512,400,000 francs. France supplied 733,343,000 francs of the imports and took 676,248,000 francs of the exports. Imports into the Spanish Zone in 1938 were valued at 123,146,184 pesetas, exports, 71,143,224 pesetas.

Finance. The 1939 budget estimates for the French Zone were: Receipts, 1,185,054,070 francs, expenditures, 1,184,958,430. The Moroccan franc was unpegged from the French franc after June, 1940, and fluctuated widely in accordance with supply and demand. The 1938 budget for Spanish Morocco balanced at 111,785,245 pesetas.

Transportation. French Morocco in 1939 had about 1,150 miles of railway line, 3,690 miles of highways and roads, and air lines connecting Casablanca with Algiers, Oran, Tunis, Toulouse (France), and Dakar (French West Africa). These air services were interrupted by the military collapse in France in June, 1940, but were resumed. In 1938, 3,352 vessels of 5,640,397 tons entered French Moroccan ports. In the Spanish Zone there were about 72 miles of railway and 1,400 miles of roads.

Government. The Sultan Sidi Mohammed (proclaimed Nov. 18, 1927) maintains a separate government in French Morocco, headed by a Grand Vizier. However all effective authority is exercised by the French Resident General, who is Foreign Minister to the Sultan and head of the French administration at Rabat. The Resident General of French Morocco in 1941 was Gen. Auguste Noguès (appointed Sept. 16, 1936) who also was commander-in-chief until Aug. 27, 1941, when he was succeeded by General Jun. In the Spanish Zone the Sultan delegates his authority to a Khalifa, named by him from a list of two candidates submitted by the Spanish Government. Actual authority is exercised by a Spanish High Commissioner residing at Tetuán. Lieut. Gen. Luis Orgaz Yoldi replaced Gen. Carlos Asensio Cabanillas as High Commissioner for Spanish Morocco May 12, 1941. Khalifa for the Spanish Zone, Sidi Muley Hassan Ben el Mehedi.

History. A statement issued on Mar. 6, 1941, announced that the Italian members of the armistice commission had left French Morocco and that their duties had been taken over by the German members of the commission. On May 22, 1941, a London report stated that the Germans had recently established military-naval and industrial-economic missions, comprising several hundred men, at different points in French Morocco. In addition, there had been a steady infiltration of Germans who were



RKO Radio Pictures, Inc

WALT DISNEY'S "DUMBO"

Above: Dumbo and Timothy Mouse.

Left: Casey Junior, the circus train.

Right: Giggles, one of the elephant matriarchs



Orson Welles in "Citizen Kane," an RKO Picture, (1) with Joseph Cotten (left) and Everett Sloane and (3) with Dorothy Comingore. (2) Evelyn Keyes and Robert Montgomery in "Here Comes Mr. Jordan," a Columbia picture. (4) A village scene and (5) a tense group of striking miners, with Donald Crisp, from Richard Llewellyn's "How Green Was My Valley," a Twentieth Century Fox Picture.

in close contact with the missions. In a residential order of Feb. 10, 1941 (published in the *Bulletin Officiel* of Feb. 12, 1941), the Director of Communications, Industrial Production, and Labor of French Morocco was authorized to control trade in raw materials and foodstuffs for which he was responsible. He could require a declaration of goods under his control, regulate the use of stocks, their circulation, and permits to export.

Dispatches to Vichy, France, Aug. 2, 1941, reported the arrest of 172 persons in French Morocco for activities against the state. Many were imprisoned and others were sent to concentration camps. On Aug. 11, 1941, some 14 soldiers and civilians, who were arrested in July and charged with plotting against the government, received sentences ranging from 5 to 15 years of hard labor, plus military degradation, loss of civil rights, and confiscation of their property. At a conference attended by Gen. Auguste Noguès and the Sultan on Aug. 19, 1941, it was decided that Jews in French Morocco who had established themselves in European sections of towns since September, 1939, will be ordered to live in the Jewish districts. See FRANCE under *History*.

In Spanish Morocco, economic conditions failed to show any improvement during the third quarter of 1941. Business was hampered by the lack of sea-borne goods required for local consumption. There were shortages of flour, automobile tires and tubes, oils and fats, and lubricating oils. Gasoline was under strict rationing. Crops were good but insufficient for local needs. A report published on June 9, 1941, stated that General Franco had 350,000 soldiers in Spanish Morocco.

MORTGAGES. See AGRICULTURE; FEDERAL HOUSING ADMINISTRATION, FINANCIAL REVIEW.

MOSELLAND. See LUXEMBURG under *History*.

MOSLEMS. See ARABIA, EGYPT; IRAN; IRAQ; PALESTINE, SYRIA AND LEBANON, TRANS-JORDAN.

MOSQUITOES. See ENTOMOLOGY, ECONOMIC; ZOOLOGY under *Insects*.

MOTION PICTURES. It took a young novice to show the way for films in 1941. At a time when the industry was faced with one major crisis after another, Orson Welles demonstrated that daring and imagination were the best antidotes for general discouragement. With his brilliant production of *Citizen Kane*, he served notice that the medium had lost none of its latent power. Foreign markets, which had started to freeze two years earlier, were nonexistent. The Government cracked down on the screen in its investigation of monopolistic practices and finally this country went to war. In the face of these hurdles, one would scarcely have expected Hollywood to turn out a truly great motion picture while keeping the general level of film production at a remarkably high point.

The fact remains that *Citizen Kane* is certain to be remembered as a milestone in the history of the cinema while the troubled period in which it was presented was generally distinguished for its screen offerings. The Orson Welles production, which the celebrated theatrical and radio showman directed and in which he starred, explored film technique anew in an exciting manner. This biography of an American newspaper publisher and financier, who destroyed himself in a confused quest of power, showed depth of characterization in film narrative which was striking. Arriving in Hollywood with no pre-conceived ideas about the medium, the author, director, producer, actor conceived and executed one of those rare artistic achievements which es-

tablish new horizons for a form. Like *The Birth of a Nation*, in which D. W. Griffith struck out a bold idiom for the silent cinema, or John Ford's *The Informer*, which did the same for the early period of talking pictures, *Citizen Kane* constituted a synthesis of technical developments as well as an exceptional photoplay.

Welles, the actor, proved the equal of Welles, the author-director, in his masterly production. His splendidly modulated portrayal of the publisher-potentate, who could buy everything but happiness and friendship belongs in the gallery of outstanding film performances. Meanwhile his supporting cast, drawn from the New York theater, was extremely artful in contributing characterizations which had substance and meaning as well as superficial glamor. Among the technical innovations to be noted were the shooting of scenes in solid, roofed-in sets; the focussing of the camera on several planes of action simultaneously and a brilliant treatment of lighting.

Although the war was uppermost in the minds of most people during the year, it had less effect than one might have expected on the character of screen offerings. John Ford, in his brilliant staging of *How Green Was My Valley*, contemplated the revolutionary social and industrial changes in a Welsh coal-mining town at the turn of the century. Walt Disney, in his delightful full-length color cartoon, *Dumbo*, demonstrated an increasing mastery of the peculiar animated picture form. *Here Comes Mr. Jordan*, in which Robert Montgomery gave new evidence of his acting skill, was sheer fantasy on a theme concerning the hereafter.

Nevertheless, one of the best and most successful films of the year was *Sergeant York*, which went back to the first World War to celebrate the background and martial exploits of its most celebrated American hero. With Gary Cooper giving one of his finest performances in a role which suited him perfectly, it proved an impressive record of human experience, as well as a challenging reaffirmation of democratic ideals and a tribute to fighting courage. *Man Hunt* dealt with the current conflict in exciting melodramatic terms, as it described the ruthless pursuit, by the Gestapo, of an Englishman who had attempted to assassinate Hitler.

Comedy bulked large in the offerings of 1941. The able writer-director, Preston Sturges, contributed a fabulous and funny show in *The Lady Eve*. Garson Kanin used all his staging skill to make a merry film in *Tom, Dick and Harry*, which merely described the romantic complications of a young girl wooed by three quite different suitors. *Major Barbara* proved another delightful translation of a Shaw play, although not up to *Pygmalion* in entertainment content.

For the most part, it was a directors' year. Few of the outstanding productions shown were dominated by stars or story rather than staging. Alfred Hitchcock, the great English director of melodrama, once more combined romance with violence in *Suspicion*, in which Cary Grant and Joan Fontaine appeared. Frank Capra looked at the contemporary social scene with brilliant, if somewhat confused, camera reporting in *Meet John Doe*. William Wyler turned out a consummate screen transcription of Lillian Hellman's somber drama, *The Little Foxes* and Walter Huston's son, John Huston, did a first-rate first job of direction with *The Maltese Falcon*. Together with Welles, Ford, and Fritz Lang, who staged *Man Hunt*, these craftsmen reminded one very forcibly that the all-important artist in a screen enterprise is the director.

Musical comedies, which one might have ex-

pected to flourish, fared poorly during the year. The best of them contrived a free interpolation of songs and dance numbers in a comic narrative. *The Road to Zanzibar*, for example, satirized the whole field of African adventure films with pleasant musical interludes. *Birth of the Blues*, with the great Bing Crosby in the leading role, traced the rise of ragtime, jazz, swing or whatever you care to call the musical idiom, while making an engaging recapitulation of famous popular songs of an earlier period. Musical spectacles, chiefly for financial considerations, were rare and inconsequential.

Historical subject matter still engaged the attention of the studios. *One Foot in Heaven* found Fredric March giving a superlative performance as an itinerant preacher during the first decades of this century. *All That Money Can Buy* was a charming adaptation of Stephen Vincent Benet's *The Devil and Daniel Webster*, with Walter Huston contributing an engaging portrayal of Satan. *H. M. Pulham, Esq.* revived the pre-World War era in Boston and added footnotes on the early years of Prohibition in New York.

There was fine acting, as well as directing during the year. The most popular star was unquestionably Gary Cooper, who appeared in both *Meet John Doe* and *Sergeant York*. Mickey Rooney maintained his box-office draw and the team of Abbott and Costello established itself as a new clowning combination. Bette Davis, in *The Little Foxes*, won new laurels; Greta Garbo gave another delightful comic portrayal in *Two-Faced Woman*; Ida Lupino was splendid in *Ladies in Retirement*; Ginger Rogers gave new evidence of her comic skill in *Tom, Dick and Harry*; Robert Young turned in a brilliant portrayal in *H. M. Pulham, Esq.* and James Gleason added immeasurably to the captivating qualities of *Here Comes Mr. Jordan*.

The documentary field of screen production was well represented. Both *The Forgotten Village*, made in Mexico by Herbert Kline and John Steinbeck, and *The Land* proved that there were excellent craftsmen working in the field of camera rapportage. From abroad came such stirring documentaries as *Channel Incident* and *Target for Tonight* to give one striking account of England's all-out warfare against Nazi aggression.

From the business standpoint, Hollywood weathered a period of crisis remarkably well. By making excellent entertainments at reduced budgets, it succeeded in off-setting the loss of revenue from foreign markets. It adopted the new consent-decree ruling, which limited distribution, without any dislocation of existing market agencies. Over 19,000 motion picture theaters operated during the year, marking a high point in cinematic history while 546 features were released. The estimated average weekly attendance at film playhouses was 85,000,000. See BUSINESS REVIEW under *Other Industries*; COORDINATOR OF INTER-AMERICAN AFFAIRS; PHILANTHROPY; PHOTOGRAPHY under *Military and Motion-Picture*. For the Browne-Bioff case see LABOR CONDITIONS under *Union Movements*.

France. Although the French cinema, as a French cinema was nonexistent in 1941, a brilliant French film was released in this country *Pepe le Moko*, directed by Julien Duvivier with Jean Gabin in the starring role, recalled the hey-day of Gallic screen production during the decade of the thirties. Both Duvivier and Gabin are now working in Hollywood.

Great Britain. The brilliant Gabriel Pascal screen version of George Bernard Shaw's *Major Barbara* was the chief contribution of the embattled English screen. In addition it sent us a splendid photo-

play about an English coal-mining district, *The Stars Look Down*, and the afore-mentioned documentaries.

U.S.S.R. Several fine Russian films were shown in this country during the year. *Wings of Victory* celebrated the exploits of the daring aviator Valeri Chkalov, who flew across the Polar Circle to this country. *Girl From Leningrad* was a stirring screen dramatization of woman's part in the Russian-Finnish war.

Awards. The New York Film Critics voted *Citizen Kane* the best picture of 1941. It selected John Ford as the best director for his staging of *How Green Was My Valley*; Gary Cooper as the best actor, for his performance in *Sergeant York* and Joan Fontaine as the best actress, for her portrayal in *Suspicion*. There was no foreign award.

See SOCIETIES under *Review*.

HOWARD BARNES.

MOTORBOATING. The sport of speeding through the water behind a powerhouse engine was the worst hit of all sports in the pre-war days. The gasoline shortage scare and the fact that many of the boats were commandeered by, or handed over to, the Navy accounted for a "flop" season. The Gold Cup, annually the big race, was a walkover for Zalmon Simmons's *My Sin*, only boat to appear at the starting line down at Red Bank. The boat made the necessary thirty-mile run to win the ancient urn. The usual big outboard shows at Boston and Chicago were abandoned and the President's Cup speedboat carnival at Washington was cancelled.

The National Sweepstakes race itself was up to standard, with the 225-cubic-inch hydroplanes putting on a spectacular show for the trophy. The winner was George Schrafft's *Chrissie IV*. Fred Jacoby stamped himself as top outboard man by winning his second Albany to New York race in May and going on to win his fifth high point medal in seven years. Frank Desmond of Villanova retained the intercollegiate championship and outscored all other amateur drivers in the competition for the Col. E. H. R. Green Round Hill Trophy, and won the National Class B title at Austin, Tex.

MOTOR VEHICLES. A huge volume year in production, second only to the peak period of 1929, was attained by the automotive industry in 1941. A large percentage of manufacture was registered in the first seven months, before the full application of restrictions designed to conserve materials needed for national defense. After the declaration of war by the United States the vehicular output dropped abruptly. Cessation of passenger-car production was foreseen on the eve of 1942. For the first time since World War I, the National Automobile Show was called off in 1941. Instead, most of the manufacturers displayed their national defense products for the press, demonstrating their new cars merely as sidelights to the main show. A few local automobile shows, sponsored by dealers in various parts of the country, were held on a modest scale.

An outstanding event, from the automotive research standpoint, was the 500-mile Memorial Day race at Indianapolis under the auspices of the Indianapolis Motor Speedway of which Capt. E. V. Rickenbacker is president. Of principal interest to the engineers in attendance was stress given to speed in its effect on component parts of cars. (See AUTOMOBILE RACING.)

Material Substitutions in 1942 Cars. Mechanical changes in the 1942 models were limited to those that could be effected without overloading the machine-tool industry.

Though striking in appearance, the 1942 models were built with the idea of releasing essential materials to the national defense program. Because of changes to alternate materials for those used in past years' cars, millions of pounds of aluminum, zinc, nickel, and other substances were saved for defense needs.

Fortunately, the basic steps in making the change already had been mapped out by the motor industry's research laboratories, which over the years had developed optional materials and techniques for virtually all the functional parts of the car. Great quantities of nickel-steel were saved by use of other alloys. Plastics were given greater use for the decorative parts, and particularly in instrument panels, interior hardware, and exterior trim. Steel stampings replaced zinc die-castings, iridescent lacquers took the place of chrome-plating in decorative exterior pieces. Among the features of the plastics emphasized by the automotive industry are greater durability, new color and beauty, lighter weight, and greater economy.

Mechanical Advances. On the mechanical side, particularly notable were transmission advances. Reduction in foot-and-hand-work while changing speeds was experienced by buyers of Oldsmobile, Cadillac, Chrysler, Dodge, DeSoto, and Studebaker lines, all of which offered variations of the fluid-oil drive principles. Gains in engine economy and power were featured by Buick, Chevrolet, Ford, Hudson, Lincoln, Lincoln-Zephyr, Pontiac, Plymouth, and Packard units. Nash introduced an all-welded Monocoque type car. In appearance, the 1942 cars were lower, racier, and contained numerous body interior changes. Greater use of color combinations gave emphasis to the bodies.

Further alterations in the 1942 cars were being made at the close of the year, as the OPM (q.v.) ordered bright decorative metals removed from radiator grilles, running boards, mouldings, and other parts of the car. This order was given to save additional amounts of chromium, copper, zinc, and other vital metals. Functional parts, such as bumpers and door handles, which might corrode if made of baser metals, were exempted from the order. This bright work order went into effect in December.

Under the stimulus of anticipated higher prices, stiffer taxes, and other factors, the automobile industry's sales reached exceptionally good levels in the spring and summer months. In the closing months, sales tapered off considerably. For the year as a whole, motor vehicle production was 8 per cent higher than in the preceding year. Factory sales totaled approximately 3,744,300 passenger cars in the United States and 1,094,230 motor trucks. Partly due to military production 1941 proved to be one of the best years in history, being approximately on a par, production-wise, with 1937 which in turn was exceeded only by 1929.

AUTOMOBILE SALES, 1941

Months	Passenger Cars	Trucks
January	411,233	89,630
February	394,513	91,109
March	410,196	97,636
April	374,979	87,291
May	417,698	101,072
June	418,983	101,542
July	343,748	100,493
August	78,529	89,071
September	187,790	66,465
October	295,568	86,432
November	256,101	96,246
December	174,962	107,243

A series of curtailment orders initiated by the OPM limited production of civilian motor vehicles

in the last five months of the year. The first order, applied to August, September, October, and November production, curtailed the industry's passenger-car and station-wagon output 26.5 per cent from the level prevailing in the preceding year. This announced cut was intended to hold this production to a ceiling of 818,369 passenger vehicles, compared to 1,113,344 vehicles produced in the corresponding months of the 1941 model year. Later on, a December quota of 204,848 passenger vehicles was announced, which was the equivalent of a 48.4 per cent curtailment for the industry. Right after the outbreak of war with the Axis powers, however, an additional 25 per cent cut in the December quota was put into effect. This new order caused a number of plants to close almost immediately, as their new quotas already had been produced in the first few days of December.

From Wheels to Wings. Passenger-car, truck, and defense production kept an average of 516,000 workers on the payrolls of automobile, body, and parts plants during 1941. Engineering staffs of the companies devoted their major efforts to defense work. On many defense projects, 1941 marked the transition from the tooling up stage to actual production of war products. As soon as machine tools were built or converted for special jobs, men and women were transferred from automotive production lines, retrained, and put to work on defense jobs. This defense personnel grew rapidly with each succeeding month.

While thousands of workmen are rated as skilled mechanics in automobile plants, a large part of these have had to go "back to school" for several months to learn new methods. The training period begins with introduction of the man to the metal which he must handle. From that point he progresses until his education is complete. "Behavior of the metals being bent, shaped or machined or riveted to make parts for bombers is entirely different from that of automobile steel when being processed, so that entirely new kinds of skill are required," says the Automobile Manufacturers Association. "When, therefore, several automobile manufacturers prepared to undertake manufacture of airplane fuselage, tail, nose, or wing sections, the first step faced by the directors of training was their own education in the arts of aluminum-alloy fabrication."

With almost half of its defense orders pertaining to aircraft, the automobile industry became one of the major factors in America's efforts to build up an air-fleet of bombers and pursuit ships. The Allison division of General Motors, builder of the liquid-cooled Allison engine used in various types of Army pursuit planes, reached its full scheduled production rate in the late fall. The Memphis plant of Fisher Body, also a General Motors unit, began shipping fuselage and other airframe sections of the North American medium bomber to the government assembly plant at Kansas City for assembly into the complete bomber. Both Buick and Chevrolet have tooled up for production of Pratt and Whitney air-cooled airplane engines, Buick having built a new plant near Chicago which is now producing aircraft parts and Chevrolet converting its Tonawanda plant at Buffalo for its job.

Chrysler and Hudson are building airframes for the Martin two-engine bomber, while Ford is making both the complete assembly and parts for the Consolidated heavy bomber. Ford also is in production on the Pratt and Whitney engine. Packard turned its first Rolls-Royce liquid-cooled engine off the production line in August, having previously built a number by hand. Studebaker is putting up

three plants, in Chicago, Fort Wayne, and South Bend, for production of the Wright air-cooled engine. Nash-Kelvinator has an airplane-propeller contract.

Tanks and Guns. In its quarter-mile long arsenal, largest tank building in the world, Chrysler is rolling out medium tanks of tremendous striking power. Mack manufactures huge tank transmissions. In 1942, General Motors and Ford will produce light, medium, and heavy tanks.

At the edge of Detroit, Hudson has built one of the world's largest naval arsenals, composed of 15 buildings covering 1,000,000 square feet and manned with automotive personnel. Among many Naval products, the Oerlikon anti-aircraft gun is being made here. Pontiac also manufactures this gun. At AC Spark Plug, Frigidaire, and the Brown-Chapin plants of General Motors, Browning machine guns for aircraft and ground use are being turned out by the hundreds daily. Chrysler is in production on the Bofors anti-aircraft gun, while Oldsmobile makes the Hispano-Suiza 20-mm gun for aircraft, and late in the year, took on a 75-mm tank-gun job. Millions of shells have been produced by International Harvester, Oldsmobile, Chrysler, Budd Wheel, and other companies. Torpedo boats are powered by Packard engines, Sea Otters by Chrysler motors and submarines by General Motor Diesel engines.

Keeping in step with the Army's expanding needs, the motor truck manufacturing companies are delivering military vehicles at the rate of 25,000 or more a month.

Among the tire companies, Goodyear is manufacturing tail surfaces, outerwings and other subassemblies for war-planes. Firestone has contracts for anti-aircraft gun carriages, machine gun clips and barrage balloons. Goodrich, General Tire, and U.S. Rubber are constructing and will operate arsenals that load shells, that bag powder and that make small ammunition.

Subcontracting. Following normal practices in its automobile and truck business, the industry in 1941 farmed out a large part of the defense job to subcontractors and suppliers. An analysis of 104 random defense contracts showed 45 per cent of the dollar volume assigned to outside concerns.

White Motor Co., for example, with orders for scout cars and personnel carriers for the U.S. Army, buys materials from 186 primary suppliers scattered throughout the nation. In turn, a questionnaire study shows an estimated 7,812 secondary suppliers furnish these primary companies with materials. Oldsmobile, engaged in making a gun with 125 parts, has farmed out to 45 suppliers all but three of these parts.

With the passing of 1941 the creation of an Automotive Council for War Production was announced by Alvan Macauley, president of the Automobile Manufacturers Association. The purpose of the organization was to pool production facilities, technical experience, and managerial talent to further the output of national defense materials.

Mr. Macauley emphasized that the formation of the council recognized that, with the country looking to mass-production industries for the utmost contribution to victory, it was imperative that, in addition to what had been done, every cooperative facility should be utilized, at once, to attain maximum volume.

Statistics. Figures released by the Automobile Manufacturers Association at the close of the year showed the wholesale value of cars produced during 1941 was \$2,610,000,000 and that of motor trucks was \$1,020,000,000. These figures include

vehicles produced for the U.S. armed forces and non-axis governments. Motor vehicle users paid \$2,100,000,000 in taxes, or 11 per cent of all taxes from all sources in the United States. Gasoline taxes—Federal, State, and local—amounted to \$1,325,000,000. Only five per cent of all automobile production went to export markets, the total units being 245,000 cars and trucks.

Motor vehicle registrations in the United States totaled 33,725,000 at the year's end, of which 28,875,000 were passenger cars and 4,850,000 were trucks. (See also table under ROADS AND STREETS.) Forty per cent of these motor vehicles were on farms or in villages under 2,500 in population. Motor buses in use reached the 145,000 mark; the number of boys and girls transported to classes in school buses totals 3,975,000 children.

Importance of the motor truck to the nation's economy was seen by the fact that trucks pay \$550,000,000 in special truck taxes, give employment to 4,300,000 truck drivers, and transport 57 per cent of the nation's livestock to market. There are 1,047,084 trucks on farms.

Automobile, body and parts plants employ 516,000 workers, receiving \$20,800,000 in weekly paychecks and wages. In addition, many jobs existed in the motor-vehicle retail business where 38,836 dealers sold passenger cars, 87,452 repair shops were operated, and 400,000 retail gasoline outlets did business.

An idea of the dependence of Americans upon cars is given in these figures from the Automobile Manufacturers Association:

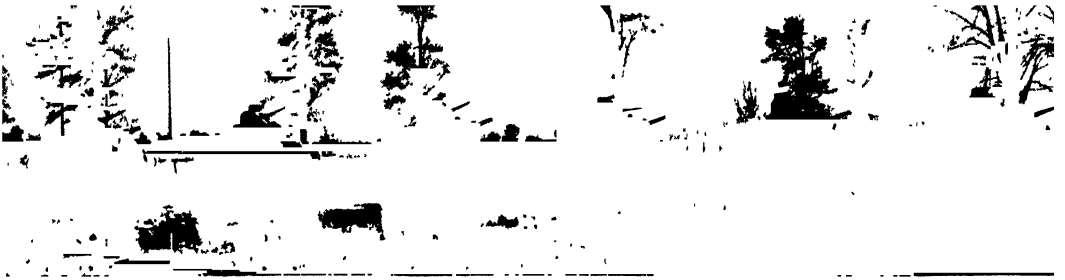
A total of 2,320 American towns and cities have dispensed with mass-transportation systems (street car, bus, etc.) of their own. Their combined populations of 12,000,000 persons now depend wholly upon private passenger cars for transportation. An additional 872 towns and cities, ranging up to the 250,000 population class, are also wholly motorized, having motor buses as their sole adjunct to private car operation.

These surveys couple with other findings that, even in cities of the 100,000 to 500,000 population group—including Oakland, Calif.; Portland, Ore.; Houston, Tex.; etc.—as many as 70 per cent of the people entering the business sections of the city on a typical day, do so by private passenger car.

Facts, obtained primarily from the U.S. Public Roads Administration and other official governmental sources, and tabulated by the Automobile Manufacturers Association show that, in a normal year, automobiles make approximately 15 billion round trips, which add up to 498 billions of passenger-miles of travel, according to analysis of latest car use studies. Three-fourths of those trips, and more than half the mileage, are for purposes connected with earning a living, or closely related economic pursuits, classified as "necessity driving." Ninety-six out of every 100 cars on the road today engage in such necessity driving. On the basis of a normal year's total travel, private car owners amassed 274 billion passenger-miles of necessity usage in more than 11 billion round trips.

Analyzed by occupational groups the findings show that the traveling salesman's average annual mileage is 18,791 miles, or more than double the average per car of all drivers. The average for medical men also is very high—12,932 miles—and doctors top the analyzed occupations in the number of round trips, having an average of 947 trips yearly per car.

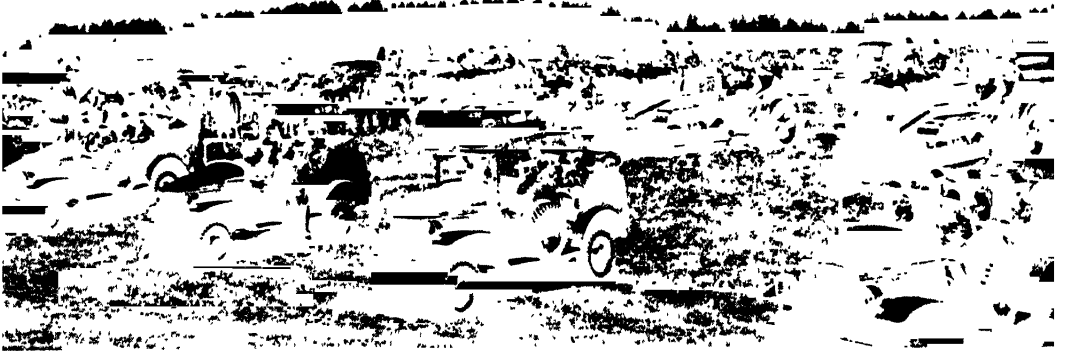
Farmers, industrial workers, and construction men make up the largest occupational groups of car owners. Drivers in these groups make short trips, piling up a relatively low annual mileage per



TANKS



WEAPON CARRIERS

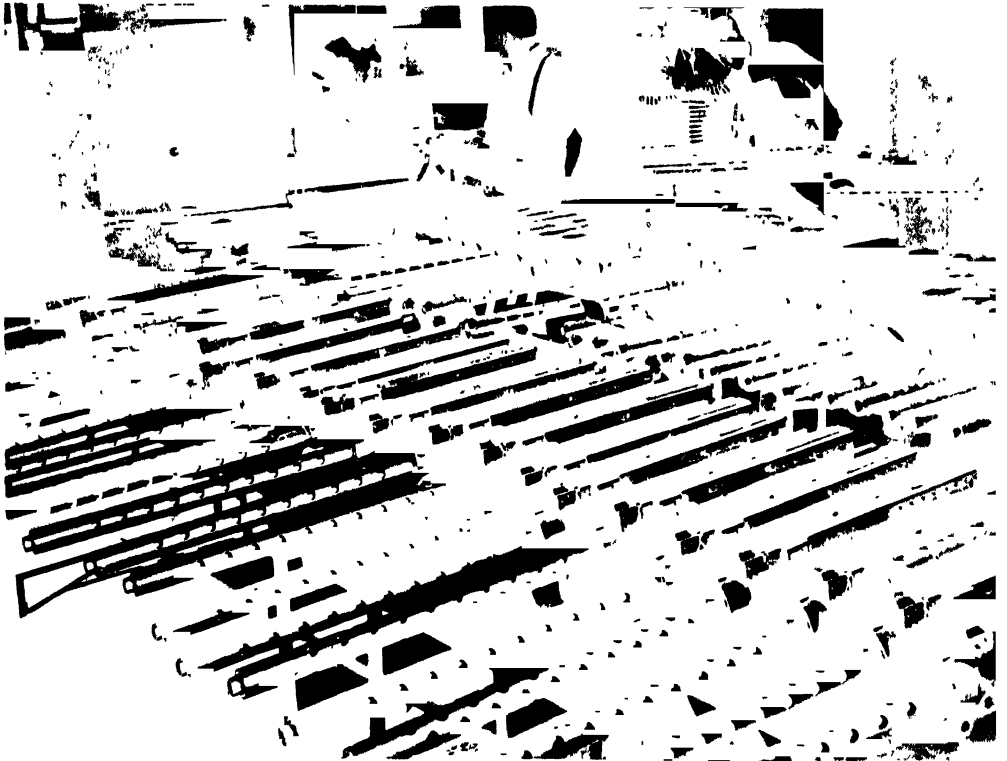
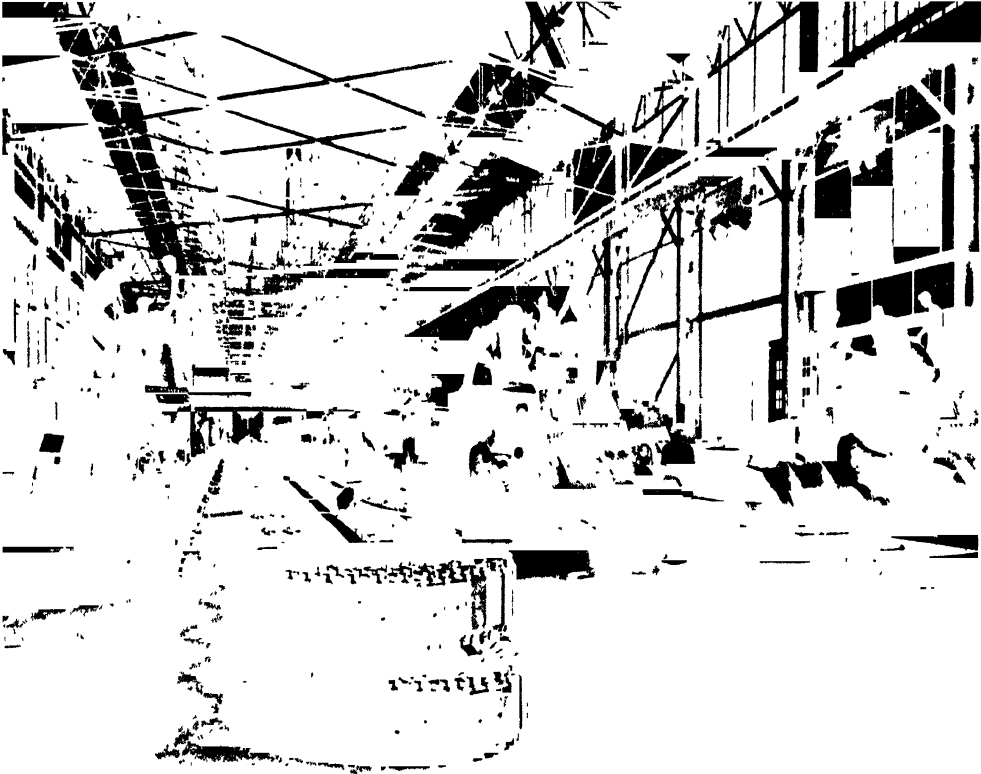


RECONNAISSANCE CARS



Photos courtesy of the manufacturers

**ARMY TRUCKS
FROM THE AMERICAN ASSEMBLY LINE TO THE FRONT LINES**



Photos courtesy of the manufact

THE MOTOR VEHICLE INDUSTRY TURNS TO DEFENSE

Constructing: The site of America's largest tank arsenal was a cornfield in 1940.
Converting A Spark Plug Division now turns out .50 caliber machine guns.

car. Farmers, according to the 1940 Census, operate 4,144,136 passenger cars, or 15 per cent of the total registered. Of every 100 miles of driving, the farm car puts in 66.8 miles on business and other necessity purposes. A sample covering of farm cars in Georgia, Michigan, Nebraska, Indiana, and Oregon showed that 98 farm cars out of 100 are used for purposes connected with earning a living. The typical farmer rolls up only 12.5 miles per trip on the average. His total annual driving amounts to 5,750 miles.

A study of wage earners' cars in the same five States showed that they devoted slightly more than half their mileage to necessity uses. Drivers making up this occupational group were unskilled as well as skilled factory workers and building tradesmen of all types. Two-thirds of these cars were used primarily for driving to places of employment.

See ACCIDENTS; BUSINESS REVIEW, CHEMISTRY, INDUSTRIAL under *Plastics*; DEFENSE TRANSPORTATION, OFFICE OF, INSURANCE under *Automobile Insurance*; MACHINE DEVELOPMENT; NATIONAL BUREAU OF STANDARDS; RAILWAYS under *Truck Auxiliary Service*; RAPID TRANSIT, TAXATION; TRANSPORTATION DIVISION; articles on the States under *Legislation* and *Transportation*. For motor fuel, see PETROLEUM. For registrations, see ROADS AND STREETS.

BERT PIERCE.

MOZAMBIQUE (Portuguese East Africa). A colony in East Africa, comprising (1) Province of Mozambique (245,773 sq. mi.), administered by the state, and (2) Manica and Sofala (51,881 sq. mi.), administered by the Mozambique Company under charter for 50 years from 1891 to 1941. Total area, 297,654 square miles. Total population (1936), 4,995,750, including 4,950,000 natives. Chief towns: Lourenço Marques (capital of the Province), 47,390 inhabitants; Beira (capital of Manica and Sofala), 12,988.

Production and Trade. Sugar, groundnuts, maize, cotton, copra, sisal, and gold were the main products. Livestock (1937): 553,531 cattle, 270,833 goats, 85,549 sheep, 72,254 swine. Trade for 1940 (in United States dollars): \$15,762,700 for imports and \$6,493,000 for exports, compared with \$19,422,900 and \$7,289,000 respectively, for 1939 (the foregoing trade figures are for the whole country). Portugal, Great Britain, the United States, and the Union of South Africa were leading countries of supply for imports. The main export markets were Portugal, the Rhodesias, the Union of South Africa, and British India. The ports of Lourenço Marques and Beira do a large transit trade for Swaziland, Transvaal, the Rhodesias, Belgian Congo, and Nyasaland. In 1940 the total volume of transit trade was 1,060,611 metric tons. Roads (1940): 17,545 miles.

Government. Budget (1939): 589,383,545 escudos. The Province of Mozambique (consisting of the districts of Cape Delgado, Inhambane, Lourenço Marques, Mozambique, Nyasa, Quelimane, and Tete) were under the control of a governor general, assisted by an executive council and government council. Manica and Sofala, the two districts under charter to the Mozambique Company, were under the control of a governor. Governor General, Gen. João Tristão de Bettencourt. Governor of Manica and Sofala, Rear Admiral Luis A. de M. Correia.

MUNICIPAL GOVERNMENT. About twenty cities and towns in the United States adopted the council manager plan of government during 1941; half as

many rejected it; there were no abandonments. The following list of places that acted on the plan has been compiled from lists supplied for use in the *Year Book* by the International City Managers' Association and the National Municipal League: nine small towns in Maine; Manchester, Northfield, Poultney, and Windsor, Vt.; Wilmington, N.C.; Tarpon Springs, Fla.; Port Huron, Mich.; Palm Springs, Calif.

Votes against the council manager plan were registered at Bar Harbor, Me.; Canton, Mass.; Enfield, Conn.; Margate, N.J.; Opelousas, La.; Cheboygan, Mich.; Ottumwa, Iowa; Mankato, Minn.; and Ennis, Texas. Five towns already under the plan voted against abandonment: Middlebury, Vt.; Vinton, Va.; Washington Court House, Ohio; Rapid City, S.D.; Burbank, Calif.

Approved council-manager cities at the close of 1941, according to the revised Directory of the International City Managers' Association, totalled 544. A few of these were in Puerto Rico, Canada, and Ireland.

The downward trend of municipal bonded debt continued for some 300 of the larger cities of the United States as the Federal debt soared with war expenditures. The municipal decrease had not yet offset the increase in the first half of the decade 1931-40. Cities under 100,000 did not contribute to the decrease. For municipal bonds, see FINANCIAL REVIEW under *Security Markets*.

Bibliography. Carpenter, *Readjustment of Services and Areas in Local Government* (Princeton), Hoan, editor, "National Government and Defense," a series beginning in *Nat. Munic. Rev.* for April (New York); Hermans, *Democracy or Anarchy? A Study of Proportional Representation* (Notre Dame, Ind.); Macdonald, *American City Government and Administration*, 3d ed. (New York); Mohaupt, "Comparative Debts and Tax Rates" for about 300 large American cities, *Nat. Munic. Rev.*, July and December (New York); National Municipal League, *Model City Charter*, 5th ed. (New York); Reed, *Municipal Management* (New York and London); Reed and others, *City Growing Pains: A Series of Discussions of Metropolitan Growing Pains* (New York); Sundquist, *British Cities at War* (Chicago); American Municipal Association, *Municipal Legislation in 1941* (Chicago); Ridley and Nolting, *Municipal Year Book, 1941* (Chicago); Towe, *The Legal Basis for Municipal Functions in Toledo* (Fostoria, Ohio).

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MUNICIPAL OWNERSHIP. The year was a discouraging one for advocates of municipal ownership of utilities. In March, Spokane, Wash., cast a large vote against buying and distributing hydro-electric power from the Grand Coulee dam either by acquiring the distribution system of the Washington Power Company or by building one at city expense. The cost of the alternative plans was about \$4,200,000 and \$6,500,000 respectively. A few months earlier Spokane voters refused to approve a county-wide public utility district to take power from the same source. Outside the city the voters endorsed the project. In April, a referendum vote at Detroit, Mich., was strongly against the acquisition and operation of the property of the Michigan Consolidated Gas Company.

In November, the voters of the city and county of San Francisco voted heavily against buying the privately owned electric light and power distribution system. This was the eighth defeat of the plan in 14 years. The situation of the city is peculiar. Under the Congressional Act authorizing it to take water from the Yosemite National Park to supply the city and to develop power San Francisco agreed to distribute power within its limits. It has developed power from the Hetch Hetchy project for years and sold it wholesale for private distribution. Cincinnati voted, about three to one, against buying the property of the Cincinnati Gas & Electric Company, or

in lieu of that duplicating the system. Springfield, Mo., voted down a proposal to buy the privately owned water works at a price fixed by a board of arbitration.

Changes from private to public ownership occurred in 1941 in several places. The most important of these was at Miami, Fla., which acquired the distribution system of the Miami Water Company, a subsidiary of the Florida Power & Light Company. Associated with this was the acquisition by the city of minor street transportation property. Miami already owned a group of wells, pumping plant, water softening, and filtration works. It is said that a large part of the steam used for pumping is derived from the city refuse incinerator. Beaver Falls, Pa., bought the water works by which it is supplied. The city of Carrolton, Mo., has constructed an electric generating plant and bought the privately owned water mains. Ketchikan, Alaska, is doubling the capacity of its municipally owned water, lighting, and heating system. The Tennessee Valley Authority made contracts to supply electric power to a half dozen additional Electric Cooperatives in Alabama and Tennessee.

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M. N. BAKER.

MUNITIONS. See MACHINE BUILDING; MILITARY PROGRESS; MOTOR VEHICLES; NAVAL PROGRESS; PRODUCTION MANAGEMENT, OFFICE OF. Compare the topics listed under NATIONAL DEFENSE.

MURALS. See PAINTING.

MURDERS. See PRISONS.

MUSCAT AND OMAN. See under ARABIA.

MUSEUMS. See ART, SOCIETIES under *Museums*.

MUSIC. Patronage of musical events in the United States was well maintained during 1941. Managers of the principal orchestras, meeting in New York in mid-December, thought that an increase, rather than a falling off of attendance was to be expected after this country's entrance into the second World War, apart from the possible effects of blackouts and air raids. Except for a few blackouts in Pacific Coast cities, musical activities followed a normal course during the first three wartime weeks. New legislation imposed a Federal 10 per cent tax on concert and opera tickets after October 1.

For several years the Columbia Concerts Corporation and the N.B.C. Concert Service, two major managerial groups affiliated with the two largest radio chains, had controlled much of the concert field. This arrangement drew the fire of the Federal Communications Commission, and plans for ending this affiliation were announced late in May. The Columbia Concerts Corporation became an independent group in June, and the N.B.C. Concert Service was separated from the National Broadcasting Company at the end of the year and renamed the National Concert and Artists Corporation.

In August, 1940, James C. Petrillo, president of the American Federation of Musicians, ordered that all instrumental solo artists must join the Federation or cease to take part in any activities in which Federation members were concerned. The American Guild of Musical Artists, which represented many of the soloists, failed to reach a compromise and went to law, but its application for a final injunction restraining Mr. Petrillo from enforcing his demands was turned down in the New York Supreme Court in November of 1940 and by the Appellate Division in January. However, on July 29, the Court of Appeals ruled that the Guild was en-

titled to a trial on this question. Although the new deadline announced by Mr. Petrillo was not enforced, several prominent concert artists joined the Federation during February and March.

In July, Mr. Petrillo ordered orchestras and bands under his jurisdiction to begin and end their programs with *The Star Spangled Banner*. The stipulation of a final performance was not enforced, but the anthem was heard thereafter at the beginning of all orchestral and band concerts and, after December 7, also after certain recitals. Igor Stravinsky's new harmonization and orchestration of the anthem was first played at Los Angeles in October.

The disagreement between the American Society of Composers, Authors, and Publishers and the radio broadcasting companies, which had kept music by A.S.C.A.P. members off the air since January 1, was ended by the signing of new contracts on October 29. These gave the A.S.C.A.P. a smaller percentage of the networks' receipts than under the old arrangement.

On February 25, Randall Thompson announced his resignation as director of the Curtis Institute of Music in Philadelphia, and was succeeded by the violinist, Efrem Zimbalst. In August, Reginald Stewart, Canadian conductor and pianist, succeeded Otto Ortmann as director of the Peabody Conservatory in Baltimore. Bruce Simonds was appointed dean of Yale University's School of Music.

The prize of \$500 offered by the Chicago Symphony Orchestra for an American work was won by Carl Eppert for his Symphonic Suite. Howard Shapero, a Harvard student, won the \$1,000 cash award which the American Academy in Rome had substituted for its peacetime residential fellowship. His prize-winning *Nine-Minute Overture* was first played in a Columbia radio program on June 8.

The two principal anniversaries of the year were Mozart and Dvorak. The 150th anniversary of Mozart's death (December 5) was widely observed in America and Europe, while the observance of Dvorak's 100th birthday (September 8) centered in Great Britain and the United States. But the composer of the year in this country was Peter Tchaikovsky. The introduction to his piano concerto in B flat minor, thanks to Freddy Martin's popularized version, was played, sung, hummed, or whistled virtually everywhere.

Organization of the New York Music Critics' Circle, with Virgil Thomson of the *Herald Tribune* as president, was completed in June. It was planned, as a stimulation to the performance of American music, to make annual awards for the best American works of various kinds introduced to New York during a given season, and also to single out for distinction a previously heard American work performed in the season under consideration.

Artists. The United States was well supplied with both American and European talent during 1941. But a substantial loss, primarily in the opera field, was caused by Kirsten Flagstad's decision not to return from her native Norway until after the war. The eminent soprano had gone to Europe by air in April, but had planned to return for 1941-42 American engagements. Another prominent opera singer, Jussi Bjoerling, Swedish tenor, went home in the spring and, early in the fall, canceled his plans for returning to America.

Fritz Kreisler was seriously injured on April 26, when he was knocked down by an automobile in New York, and at first prospects for his recovery were doubtful. The noted violinist gradually regained his health, but his doctors decided that he should not resume his career before February, 1942,

at the earliest. Marian Anderson, Negro contralto, who was born in Philadelphia, received that city's annual Bok award for noteworthy achievement in art or science and significant contribution to Philadelphia's prestige.

Chamber and Choral Music. A noteworthy feature in the American chamber music field was a gain in the number and popularity of small orchestras and chamber music ensembles, which proved to be an important source of new or unfamiliar works. In New York, the New Friends of Music added modern works to their repertoire for their chamber music series of 1940-41, but returned to the classic and romantic repertoire for the following season. Thanks to the concerts sponsored by the Elizabeth Sprague Coolidge Foundation at the Library of Congress, Washington was an important chamber music center during the regular season, and was also the scene of a successful experiment with outdoor concerts of this kind for six weeks in the summer. Other summer activities in this field centered mainly in southwestern New England and the San Francisco area in California.

Many new works were introduced during the year. Among these were Aaron Copland's *Quiet City*, Anis Fulcihan's *Epithalamium*, Emerson Whithorne's *Promenade*, Arthur Shepherd's piano quintet, Artur Schnabel's fifth quartet, Benjamin Britten's string quartet, and Dmitri Shostakovitch's piano quintet.

One of the year's principal choral novelties was Honegger's dramatic legend, *Nicolas de Flue*, introduced to America by the Dessoff Choirs and New Friends of Music Orchestra in New York on May 8. On the whole, the principal choral societies of the larger cities preferred the classic repertoire, and devoted much attention to Bach. Handel's *Messiah* had its usual quota of Christmastide performances by choral groups, large and small, throughout the country. The Yale Glee Club, under Marshall Bartholomew, toured Argentina, Brazil, and Uruguay in July, and included South American music in its programs.

Festivals. The eighteenth festival of the International Society for Contemporary Music, which was the first to be held in America, took place in New York from May 16 to 27. Twenty-six composers from ten or more countries were represented in three programs at Columbia University, the New York Public Library, and the Museum of Modern Art and seven programs or parts of programs presented by the National Broadcasting Company and Columbia and Mutual Broadcasting Systems. Several composers of Germanic origin now living in the United States entered as "independents."

A few orchestral works were played in the radio concerts, but the bulk of the repertoire consisted of solo works, sonatas, and music for chamber ensemble. Seven of the composers represented were from the United States and four from Mexico and Argentina. One of the most consequential works to be introduced was Benjamin Britten's *Les Illuminations* for tenor and small orchestra.

Programs of symphonic and choral works, including a concert for young people, were performed in the long-established large scale festivals at Cincinnati, May 6-10, under Eugene Goossens; Ann Arbor, May 7-10, under Eugene Ormandy, Saul Caston and Thor Johnson, and Worcester, October 6-11, under Albert Stoessel. The Philadelphia Orchestra again played at Ann Arbor. The Worcester programs included stage performances of two operas, *The Devil and Daniel Webster*, by Douglas Moore and Stephen Vincent Benet, and *La Traviata*.

At Rochester, N.Y., the Eastman School of Music held its annual American festival April 28 to May 2 under Howard Hanson's direction. In addition to the famous series at Bethlehem, Pa., May 16-17, Bach festivals were held at Berea, O., in June, and Carmel, Calif., in July. An American music festival series was held in Los Angeles in June in connection with the convention of the National Federation of Music Clubs.

Nine concerts were given by the Boston Symphony Orchestra under Serge Koussevitzky's direction in the eighth annual Berkshire Symphonic Festival at Lenox, Mass., July 31-August 17. Modern composers represented included Villa-Lobos, Shostakovitch, Hindemith, Samuel Barber, Aaron Copland, Hanson, Prokofieff, and Vaughan Williams. The opera department of the allied Berkshire Music Center gave two performances of *Costi fan tutte* in its new theater. Attendance broke all records, exceeding the 1940 total by 14,000.

In Canada, Sir Thomas Beecham conducted the sixth annual Montreal Festival in June, offering Bach's Mass in B minor, Faure's Requiem, Elgar's *Dream of Gerontius* and Mozart music.

Opera. The fifty-sixth regular season at the Metropolitan Opera House in New York opened a sixteen week course on Dec. 2, 1940. At home, the company gave 116 performances of 35 operas, and made 49 appearances in ten other cities. Wagner again was the most represented composer, followed by Verdi.

Gluck's *Alceste* had its first Metropolitan performance on January 24 with Marjorie Lawrence in the title role. Verdi's *Un Ballo in Maschera*, unheard since 1916, was revived on the opening night with Jussi Bjoerling as Riccardo, or King Gustavus III. Announcing a policy of giving more attention to comedy in stressful times, General Manager Edward Johnson revived Donizetti's *Don Pasquale* (December 21) and *La Fille du Régiment* (December 28), the latter as a new vehicle for Lily Pons. *Il Trovatore* had a restudied production with new sets December 12, and six operas returned to the active list after relatively brief absences.

As a new feature, the Metropolitan engaged four guest conductors, Bruno Walter, Ferruccio Calusio of Buenos Aires, Edwin McArthur, and Italo Montemezzi who conducted his *L'Amore del Tre Re*. The performances under Mr. Walter, including *Fidelio*, *Don Giovanni*, and *The Bartered Bride*, this last sung in English, were among the most memorable features of the season.

Salvatore Baccaloni, Italian basso buffo, who exhibited a notable character as a singing actor, was the season's most notable vocal acquisition. Eleven others, including six Americans, sang at the Metropolitan for the first time: Norina Greco, Eleanor Steber, and Josephine Tuminia (Americans) and Stella Roman (Rumanian), sopranos; Elsa Zebranska, Latvian contralto; Emery Darcy (American) and John Dudley (Australian), tenors, and Arthur Kent, Francesco Valentino (Americans) and Alexander Sved (Hungarian), barytones. For 1941-42, Lothar Wallerstein, noted Czech regisseur, was engaged as a stage director, and Laurent Novikoff succeeded Boris Romanoff as ballet master. Bruno Walter returned for a longer guest engagement, and Sir Thomas Beecham, hitherto known in America as a symphonic leader, also accepted a Metropolitan invitation to appear as guest conductor. Paul Breisach was added to the regular conductorial staff.

The loss of Kirsten Flagstad's services and, as the result of a long illness, those of Marjorie Lawrence as well, left Helen Traubel, American so-

prano, as the only member of the company whose voice was well suited to roles such as the Brunnhildes of the Ring cycle. *Tristan und Isolde* was dropped from the repertoire, and the number of Wagnerian performances reduced. But there was more Mozart; *Le Nozze di Figaro*, the first Mozart work to open a Metropolitan season, was given on the first night of the regular 16 week series, November 24. *Don Giovanni* was sung December 5, the 150th anniversary of the composer's death, and *The Magic Flute* had a new production under Mr. Walter's direction (December 11) in an English translation by Thomas P. Martin, a new member of the musical staff, and his wife. Rosa Bok, Austrian soprano, made her American operatic debut as the Queen of the Night, with Jarmila Novotna, Charles Kullman, John Brownlee, and Alexander Kipnis in other leading roles. Donizetti's *L'Elisir d'Amore* had its first performance since January, 1933, on November 28 with Bidu Sayao, Bruno Landi, and Messrs. Valentino and Baccaloni as the principals.

Astrid Varnay, a talented Swedish-American soprano, 23 years old, helped the Metropolitan to meet its Wagnerian problem, although some critics considered her voice a little too light for Wagner's dramatic roles. Other singers who made Metropolitan debuts before December 31 were Nadine Conner and Maria Van Delden, sopranos; Mona Paulce, mezzo-soprano; Mary Van Kirk, contralto; Jan Pearce and Kurt Baum, tenors, and Lansing Hatfield and Gerhard Pechner, bassos.

Improved artistic standards and increased ticket sales had marked the Chicago Opera Company's 1940 season, but a \$100,000 deficit led to another reorganization. Fortune Gallo, impresario of the long-established touring San Carlo company, became general manager and the noted veteran Italian tenor, Giovanni Martinelli, artistic director. The 1941 season was cut to five weeks, opening November 8, and from six to five weekly performances. This had an unexpectedly successful record, with a deficit of \$20,000—a small figure as opera deficits go. Sixteen of the 26 performances were sold out. One reason for this improved showing was the restriction of the repertoire mainly to well known works and the absence of the usual previous competition of the San Carlo company's fall visit.

The San Francisco Opera Association held its longest and busiest season thus far, giving 31 performances between October 2 and November 9. In addition to a week in Los Angeles and two performances in Seattle, it paid its first visits to Portland and Seattle. The repertoire was conservative. The Metropolitan was well represented in the San Francisco casts and also in those of the short spring and fall seasons in St. Louis.

Experiments with new or unfamiliar operas were left for more or less new organizations and for chamber opera groups, especially those associated with colleges. In New York, the New Opera Company made a promising start with a six weeks' season, including a fortnight of performances by the American Ballet Theater, which opened October 14. Mozart's *Costi fan tutte* and Verdi's *Macbeth* were sung in Italian with Fritz Busch conducting and his son, Hans, as stage director. Tchaikovsky's *Pique Dame* and Offenbach's *La Vie Parisienne* were sung in English. The casts were composed of young American singers. The Philadelphia Opera Company gave all its performances in English, including the first translated performances in this country of *Pelléas et Mélisande*, February 25, and *Rosenkavalier*, December 2. In the latter the role of Octavian was assigned to a tenor instead of the usual soprano or mezzo-soprano.

The Philadelphians gave the stage premiere of Menotti's *The Old Maid and the Thief* and the first American performance of Reznicek's *Fact or Fiction* in January. Cincinnatti had a six week summer season, and Rossini's *The Barber of Seville* and Gluck's *Orpheus* were sung in English in the summer festival at Central City, Col.

Among modern works produced for the first time were Marc Blitzstein's *No for an Answer*, Arthur Benjamin's *The Devil Take Her* (American premiere), and Vittorio Giannini's *Blennerhasset* (stage premiere), and Benjamin Britten's *Paul Bunyan*, all in New York; George Kleinsinger's *Victory Against Heaven* (Hartford), and Paul Nordoff's *The Masterpiece* (Philadelphia).

The new Opera de Mexico, which President Avila Camacho had helped to finance, gave 19 performances in its first season in July at Mexico City with Mexican singers and others brought from the United States. South America's principal opera season at the Teatro Colon in Buenos Aires ran from May 20 to September 21 with a repertoire of French, Italian, and German works. An Argentine work, Arnaldo d'Esposito's *Lin Calel*, was first produced August 12. A popular season followed, and a spring season opened November 4. Oscar Lorenzo Fernandez's *Malazarte* was produced September 30 at the end of the seven week winter season in Rio de Janeiro, with the New York tenor, Frederick Jagel, in a leading role. Although its subject was Brazilian, it was sung in Italian. A new Chilean opera, Carlos Melo Cruz's *Maurico*, was produced in Santiago September 28.

Orchestras. The Philharmonic-Symphony Society of New York began its 100th season in October. The Chicago Symphony Orchestra completed its fiftieth season in April. The Chicago orchestra, under Frederick A. Stock and, as associate conductor, Hans Lange, observed the anniversary by presenting an unusual number of new works. The Philharmonic featured its celebration by inviting eight guests to share the conductorship with its regular leader, John Barbirolli. Those who appeared between the opening of the season, October 9, and the end of the year were Leopold Stokowski, Bruno Walter, Artur Rodzinski, and Dimitri Mitropoulos. Messrs. Mitropoulos and Walter had also made guest Philharmonic appearances in the winter. Walter Damrosch, the dean of American conductors, conducted two concert performances of the revised version of his second opera, *Cyrano de Bergerac*, February 20 and 21.

Dr. Stock began his 37th consecutive Chicago season in October, when Serge Koussevitzky opened his 18th season with the Boston Symphony Orchestra. Most of the other major orchestras continued under the same conductors as before. These included Eugene Ormandy in Philadelphia, Hans Kindler in Washington, Fritz Reiner in Pittsburgh, Artur Rodzinski in Cleveland, Eugene Goossens in Cincinnati, Fabien Sevitzky in Indianapolis, Vladimir Golschmann in St. Louis, Dimitri Mitropoulos in Minneapolis, Karl Krueger in Kansas City, and Pierre Monteux in San Francisco. The Detroit Symphony and Los Angeles Philharmonic Orchestras divided their seasons among guest conductors. Sir Thomas Beecham became conductor of both the Seattle and the Vancouver orchestras for 1941-42.

Fifty-six scores were submitted in a competition for American works held by the National Symphony of Washington. The ten chosen by Dr. Kindler were played in a special concert for the subscribers, who awarded the first prize to Arnold Cornelissen's symphony and the second to Robert O. Barkley's *Sunday Evening in Bloomfield*.

Among the concerts held by the various Work Projects Administration orchestras, the most ambitious series was that held by the New York City Symphony in Carnegie Hall, with Sir Thomas Beecham as one of the guest conductors. Here the programs were relatively conservative. More modern works were played by WPA orchestras in other cities, especially the Illinois Symphony of Chicago under Izler Solomon's direction.

Arturo Toscanini, who completed his fourth season with the N.B.C. Symphony of New York in the spring, undertook no long engagements for 1941-42, but appeared with the Philadelphia Orchestra November 14-15. Leopold Stokowski, who ended his connection with the Philadelphia Orchestra in April, assembled a second All American Youth Orchestra for a transcontinental tour from May until July, and conducted five of the N.B.C. Symphony's concerts in October.

Of the many summer orchestral series, the most ambitious were the New York Stadium Concerts, in their 24th season, the Robin Hood Dell concerts in Philadelphia; the Ravinia Festival, near Chicago, and the Hollywood Bowl concerts near Los Angeles. At the Stadium, weather permitting, concerts took place every evening for eight weeks. The others had a less intensive schedule.

In Canada, Sir Ernest MacMillan continued as conductor of the Toronto Symphony Orchestra for its nineteenth and twentieth seasons. Reginald Stewart, who opened Toronto's weekly Promenade series May 1, resigned June 25, and guest conductors completed the series. The Belgian leader, Désiré Defauw, became regular conductor of Montreal's Les Concerts Symphoniques.

Carlos Chavez conducted the Orquesta Sinfónica de México in the usual summer series in Mexico City, with Igor Stravinsky and Sir Thomas Beecham as guest leaders. Massimo Freccia continued as conductor of the Havana Philharmonic Orchestra, which increased its number of subscribers from 600 to 2,500. Arturo Toscanini went to Buenos Aires to conduct the orchestra of the Teatro Colon in June and July. In Rio de Janeiro, the Municipal Orchestra under Albert Wolff gave the first complete performance of Villa-Lobos's *Fantasia de Movimentos Mixtos*.

Music in Europe. One effect of the war in England was a decentralization and spreading of musical activities; the London Philharmonic and London Symphony Orchestras and the Halle Orchestra of Manchester made extensive tours, reaching places which had had no symphony concerts in prewar days. London's foremost concert auditorium, Queen's Hall, was destroyed by bombing in May. The large Albert Hall then became London's principal orchestral center; the historic Promenade series was held there from July 12 to August 23, with Sir Henry Wood, assisted by Basil Cameron, as conductor. Various experiments were made towards improving the Albert Hall's acoustics.

Despite the air raids of the winter and spring, London kept up a remarkably vigorous musical life, maintaining several orchestral series as well as chamber music, choral programs, and recitals. Considerable attention was paid to British and other modern works, both by the British Broadcasting Corporation, and by concert groups and soloists. A series of concerts specializing in contemporary music was launched by Boosey and Hawkes in October. The notable series of popular-priced concerts organized by Myra Hess, who received the title of Dame in recognition of her services, completed its second year in October, with programs including all kinds of solo and chamber music.

Russia's entry into the war against Germany resulted in increasing interest in Russian music; Moussorgsky's opera, *Fair at Sorotchintsi*, had a three weeks' run at the Savoy Theater October 6 to 25. Regular orchestral series, as well as concerts of music in smaller forms, were presented in other large British cities, such as Birmingham, Manchester, and Liverpool.

The Sadler's Wells company appeared in London for two weeks in February and three in the spring. In a summer tour of provincial towns which it had not visited before, it gave acts from various operas rather than complete performances. In Oxford R. Vere Simpson's opera *The Imbroglia*, in 18th century style, had its first performance late in May.

Little musical news came from France. Early in the spring, it was reported that programs in Paris had to be approved by a special commission, and that orchestras were not allowed to play German music. In the fall, the Paris Opera was said to be giving its usual classic repertoire, and that opera had been resumed in Lyons and Marseilles. The repertoire of a six weeks' summer series at Vichy included several German works.

Wagner's *Parsifal* was the last work to be performed at the State Opera in Berlin before it was set on fire and virtually destroyed in an air raid April 9. Musical activities in Germany, including Austria, were said to be continuing at their usual pace. A Wagner festival was held in the summer at Bayreuth, and Vienna was the center of a Mozart anniversary festival early in December.

Francesco Malpiero's new three act opera, *Ecuba*, was produced in Rome January 13, and favorably received. Other novelties scheduled for the principal Italian winter seasons were Gerstner's *Enoch Arden* and Persico's *La Locandiera* in Rome, Porrino's *Gli Orazi* in Milan, Kempff's *Famiglia Gozzi* and Filiasi's *Mattutino d'Assisi* in Naples, and Mario Persigallo's *Lo Stendardo di San Giorgio* in Genoa.

In Switzerland, Zurich had its annual opera festival, which included the local première of Strauss's *Daphne*, in addition to *Pelléas et Mélisande*, *Tristan und Isolde* with Germaine Lubin, *Die Walkure*, *Die Meistersinger*, *La Traviata*, and Hans Haug's *Tartuffe*. The orchestra of Milan's La Scala played in the annual summer festival at Lucerne under Italian and Swiss conductors. Rossini's *William Tell* received an outdoor festival production at Geneva, and in Winterthur Hermann Scherchen directed a summer festival series illustrating four centuries of orchestral music.

The 1940-41 opera season in Stockholm began in September with a revival of Peterson-Berger's *Prophets of World's End*. Another Swedish work, Kurt Atterberg's *Aladdin*, had its first production in March. Among the new operas produced in Moscow were a work by Kriukov based on a Pushkin story, Khrennikov's *In the Tempest*, and Einatov's *The Family*. Dimitri Shostakovich completed his 7th symphony and Nicolai Miaskovsky added a 20th and 21st symphony to his long list of works in this form.

See NEGROES; PHILANTHROPY; RADIO PROGRAMS.

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W. Vance, *Life and Work of Anton Dvorak*; Gladys Burch, *Richard Wagner Who Followed a Star*, Giulio Gatti-Casazza, with Howard Taubman, *Memories of a Career*; Ernest Newman, *Life of Richard Wagner*, Vol. III.

History. Wallace Brockway and Herbert Weinstock, *The Opera*; Howard D. McKinney and W. R. Anderson, *Music in History*, Boston; Paul Henry Lang, *Music in Western Civilization*; Hazel G. Kinsella, *History Sings*; Hortense Panum, tr Jeffrey Pulver, *Stringed Instruments of the Middle Ages*, London; Gustave Reese, *Music in the Middle Ages*; Gilbert Chase, *The Music of Spain*; Edmund H. Fellowes, *English Cathedral Music from Edward VI to Edward VII*, London.

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Theory, Teaching, and Technique. George Sherman Dickinson, *The Pattern of Music*, Lilius Mackinnon, *Music by Heart*, Vincent Morgan, *Music in the Secondary School*, Worcester, Mass.; Bernard Kwartin, *Fundamentals of Vocal Art*, S. Lloyd, *The Musical Ear*, Peter W. Dykema and Karl W. Gehrkens, *Teaching and Administration of High School Music*, Boston; Robert Dolejski, *Modern Viola Technique*, Chicago, Stanley Chapple, *Language of Harmony*; Francis M. Collinson, *Orchestration for the Theater*, Paul Hindemith, tr Otto Ortmann, *The Craft of Musical Composition*, Vol. 2, Harold Berkeley, *Modern Technique of Violin Bowing*.

Miscellaneous. Herbert Graf, *The Opera and its Future in America*; Hendrik Willem Van Loon and Grace Castagnetta, *The Songs America Sings*, Elizabeth C. Moore, *Almanac for Music Lovers*, Verna Arvey, *Choreographic Music*, Kurt Schindler, *Folk Music and Poetry of Spain and Portugal*, Charles Cooke, *Playing the Piano for Pleasure*, Marion Bauer, *Musical Questions and Quizzes*.

FRANCIS D. PERKINS.

MUTUAL ASSISTANCE PACTS. See BALKAN ENTENTE; EGYPT, GERMANY, GREAT BRITAIN, GREECE, and UNION OF SOVIET SOCIALIST REPUBLICS, under *History*.

NANYO. See JAPANESE PACIFIC ISLANDS.

NARCOTIC DRUGS CONTROL. *International.* Establishment of branch offices of the Permanent Central Opium Board and the Drug Supervisory Body in Washington, D.C., early in 1941 have made it possible for the nations outside war torn Europe to keep international control functioning. These two organs created under the 1925 and 1931 Narcotic Conventions continue supervision of international trade in dangerous narcotic drugs through the offices set up in the capital of the United States. Estimated needs of the nations of the Western Hemisphere are transmitted to the newly established branch offices. In 1941, 25 Latin American countries obtained more than 20,000 kilograms of opium derivatives and 50 kilograms of cocaine salts for medical needs. The system of import certificates and export authorizations in force for the control of imports and exports of opium and coca leaves and their salts, derivatives and preparations continued to operate successfully during 1941.

National. Reports received from many reliable sources indicate that drug addiction in the United States is steadily decreasing, and that there are few instances where an individual has recently acquired a drug habit. The police of many cities report that there were few arrests of drug addicts; that most of the users arrested showed no signs of acute withdrawal symptoms as compared to several years ago when very acute withdrawal symptoms were evident; that many of the addicts resorted to the use of barbituric acid derivatives as substitutes for morphine and heroin; and that cocaine addiction had practically disappeared.

There were few heavy arrivals of raw opium in the United States. The opium traffic from the Far

East fell off considerably. There was a considerable increase in seizures of raw opium from Mexico. This opium is grown clandestinely. The Government of Mexico has been vigorous in destroying known plantings.

The heaviest arrivals of prepared opium occurred in the Pacific Coast Area as in the past, and a great deal of this opium bore evidence of having been prepared in the French Leased Territory of Kwangchow-wan. Some prepared opium was seized bearing the imprint of the British Opium Monopoly in Singapore which has in the past been distributed to British colonies and possessions in the Far East.

Seizures of morphine were rare.

Heroin was found in many parts of the United States but was adulterated up to 99 per cent. The price in the illicit traffic based on purity was about \$2,000 per oz. which represented the largest spread between licit and illicit value of any known commodity.

Marihuana (*Cannabis Sativa L.*) continued to be a problem. There was an appreciable increase in petty smuggling of marihuana into the United States by seamen on vessels touching at Central American, South American, and other ports. There was likewise an increase in smuggling over the border from Mexico. Due to the ease with which the plant can be cultivated domestically, the smuggling of marihuana was of relatively small importance. During the months of May and June, 1941, approximately 33,000 acres of this plant were destroyed throughout the United States.

The abuse of marihuana consists principally in the smoking for the narcotic effect of the resinous flowering tops and crushed portions of the plant, rolled into cigarettes.

The shortage in many sections of smuggled drugs has resulted in additional efforts being made by peddlers and addicts to divert drugs from medicinal sources. Some five years ago 99 out of 100 addicts obtained their drugs from smuggled sources. Out of 100 cases examined recently about 70 received their drugs through forged prescriptions and robberies. Robberies of drug stores continue at an alarming rate, approximately 100 a month. For the purpose of obtaining narcotic drugs to gratify addiction, there are many cases where a physician has had his medical kit stolen from his parked automobile.

The abuse of paregoric became so persistent that it was necessary during the past year for twelve States to pass legislation removing it from the exemption provision of the State narcotic acts. Because of its deviation to illicit uses, in Canada paregoric is now on doctor's prescription, whereas in the United States it can still be sold across the counter in most states. The per capita consumption of paregoric in the United States is fifteen times that of Canada. See CUSTOMS, BUREAU OF.

H. J. ANSLINGER.

NARCOTICS, Bureau of. See NARCOTIC DRUGS CONTROL.

NATAL. See SOUTH AFRICA, UNION OF under *Area and Population*.

NATIONAL BUREAU OF STANDARDS. The Constitution of the United States provides that "the Congress shall have Power to coin Money, regulate the Value thereof, and of foreign Coin, and fix the Standard of Weights and Measures." Under this authority on Mar. 3, 1901, Congress passed an act establishing the National Bureau of Standards.

The Bureau's functions are the development,

construction, custody, and maintenance of reference and working standards needed in science, engineering, industry, and commerce. This requires research on a broad scale, which is usually conducted in cooperation with Governmental agencies or with scientific and industrial groups, often through a research associate arrangement. Routine tests involving at least indirect comparisons with the National Standards are made for the general public, but the bulk of the Bureau's test work is in connection with the purchase of supplies by the Federal Government, the tests covering almost everything except food and drugs. Information obtained as a result of the Bureau's studies is made available through a monthly *Journal of Research* and other series of non-periodical publications, as well as by articles in the newspapers and magazines. A small monthly *Technical News Bulletin* carries announcements of all publications and describes progress of work in the laboratories.

The Bureau's organization is made up of nine scientific and technical divisions, and three engaged in commercial standardization, as follows: Electricity, Weights and Measures, Heat and Power, Optics, Chemistry, Mechanics and Sound, Organic and Fibrous Materials, Metallurgy, Clay and Silicate Products, Simplified Practice, Trade Standards, and Codes and Specifications. Each division, in turn, is divided into sections which are the working units covering specialized fields, as for instance the length section of the Weights and Measures Division.

The Bureau occupies a tract of 67.8 acres in the northwest suburbs of Washington. The plant consists of 20 major buildings, and the regular staff numbered 1,204 on June 30, 1941. The appropriation for the fiscal year which ended on that date was \$2,037,500.

Since a great deal of the Bureau's work during the past year was on confidential problems connected with the National Defense Program, it is impossible to report upon all of its activities at this time. It may be said, however, that the development of mechanized warfare has greatly increased the importance of uniform standards in the manufacture of military equipment, and the Bureau has been called upon to test many materials and devices, and to investigate new production processes. Members of its staff are cooperating with the Army, Navy, the National Advisory Committee for Aeronautics, and the National Defense Research Committee. The chief of the Bureau's Division of Simplified Practice has been selected to head the new Bureau of Industrial Conservation under the Office of Production Management.

In spite of the attention given to military problems, the Bureau has continued to serve American industries. Thus, the broadcasting of standard frequency signals has been improved by introducing an accurate five-minute time interval between announcements.

Cooperative work with the Textile Foundation has yielded important basic data on the properties of wool and other fibers. As an example, a solution of the problem of moth-proof fabrics may result. A cooperative project, now being started with the Copper and Brass Research Association, deals with copper vats, tanks and containers in general, the object being to improve their mechanical construction which is at present based on rule-of-thumb methods.

The five-year vehicle scale testing program in which the Bureau cooperated with the State Governments, was completed ahead of schedule. The Bureau's equipment visited every State that did

not have adequate facilities. As a result of this work, at least 15 more States now have suitable equipment for testing motor truck scales.

Tests of materials and constructions suitable for low-cost housing were continued. A so-called "streamlined" plumbing code for use in connection with housing projects was issued and has been in great demand. A revised edition of the Handbook on *Screw Thread Standards for the Federal Services* is now being printed. A report combining the results of fire-tests on various types of partitions was published as part of the structural materials program.

The Bureau cooperated with the U.S. Coast Guard and the Carnegie Institution of Washington in developing a program for, and in equipping the Louise A. Boyd Arctic Expedition which spent the summer in the vicinity of Greenland studying ionosphere conditions, geomagnetism and auroral phenomena. Two members of the radio section accompanied the expedition and obtained valuable data on radio transmission conditions between the United States and Europe.

A complete report of the Bureau's work on dental materials, which was started in 1919 at the request of the War Department and for many years has been conducted in cooperation with the American Dental Association, has been prepared and will soon be available. Through this work, and the certification plan which has been developed in connection with it, the quality of dental supplies has been greatly improved.

Great attention is being given to improving the performance of motor vehicles so as to get more work out of a gallon of gasoline. Devices designed to promote fuel economy are being examined for the office of the Petroleum Coordinator.

The Bureau has continued to aid the Treasury Department in the preparation of Federal Specifications, with particular emphasis on the use of substitutes for strategic materials, such as aluminum and copper. In order to promote efficiency in the expenditure of public funds, lists of manufacturers who certify that their products meet the requirements of nationally-recognized specifications and Commercial Standards are sent on request to Governmental purchasing agents.

All the parts of the new National Electrical Safety Code are now available, and the complete code in one volume will be ready early next year. The carrying of this revision to a successful conclusion has required months of effort, dozens of conferences and the adjustment of many differences of opinion held by widely diversified groups.

During the year, several important meetings took place under the Bureau's auspices, including the 31st National Conference on Weights and Measures, the usual spring meeting of the American Physical Society, and the Nineteenth Annual Conference of State Utility Commission Engineers.

LYMAN J. BRIGGS.

NATIONAL DEBT. See PUBLIC FINANCE; UNITED STATES under *Foreign Affairs*. For debts of foreign countries, see articles on countries under *Finance*.

NATIONAL DEFENSE. For a general discussion see the UNITED STATES under *Defense* and the articles on the countries under *History*.

Armed Forces. See AERONAUTICS under *Military*; MILITARY PROGRESS; NAVAL PROGRESS; WORLD WAR; the principal countries under *Defense*. For the establishment of State guards see the articles on States under *Legislation*.

Governmental Organization. See the covering list

entitled NATIONAL DEFENSE AND WAR AGENCIES and separate articles on each of the following: DEFENSE BOARD, CANADIAN-AMERICAN JOINT, CENSORSHIP, OFFICE OF; CIVILIAN DEFENSE, OFFICE OF; COORDINATOR OF INFORMATION; COORDINATOR OF INTER-AMERICAN AFFAIRS; DEFENSE COMMUNICATIONS BOARD; DEFENSE HEALTH AND WELFARE SERVICES; DEFENSE HOUSING COORDINATION, DIVISION OF; DEFENSE TRANSPORTATION, OFFICE OF; ECONOMIC WARFARE, BOARD OF; FACTS AND FIGURES, OFFICE OF; LEND-LEASE ADMINISTRATION; NATIONAL DEFENSE MEDIATION BOARD; NATIONAL INVENTORS COUNCIL; PETROLEUM COORDINATOR OF NATIONAL DEFENSE; PRICE ADMINISTRATION, OFFICE OF; PRODUCTION MANAGEMENT, OFFICE OF; SCIENTIFIC RESEARCH AND DEVELOPMENT, OFFICE OF; SELECTIVE SERVICE SYSTEM; SUPPLY PRIORITIES AND ALLOCATIONS BOARD; WAR PRODUCTION BOARD. For the War Labor Board, see LABOR CONDITIONS. For the State Defense Councils, see articles on States under *Legislation*.

In addition to the especially established defense agencies, most of the regular departments and bureaus of the U.S. Government engaged in defense activities. See also the articles on those, especially AGRICULTURE, U.S. DEPARTMENT OF; CIVILIAN CONSERVATION CORPS, COAST GUARD, U.S.; FEDERAL BUREAU OF INVESTIGATION, MINES, BUREAU OF; RECONSTRUCTION FINANCE CORPORATION.

Defense Production. See BUSINESS REVIEW and articles on the various industries, especially MACHINE BUILDING, MOTOR VEHICLES, SHIPBUILDING; agencies in charge of production, especially ECONOMIC WARFARE, BOARD OF; PETROLEUM COORDINATOR OF NATIONAL DEFENSE, PRODUCTION MANAGEMENT, OFFICE OF; SUPPLY PRIORITIES AND ALLOCATIONS BOARD; WAR PRODUCTION BOARD. For the training of workers for defense industries, see topics listed under DEFENSE TRAINING. For defense production abroad, see AUSTRALIA, CANADA, INDIA, and other belligerent countries under *History*.

Defense Expenditures. See BUSINESS REVIEW; PUBLIC FINANCE; the belligerent countries under *Finance* or *History*.

Appropriations and Other Legislation. See UNITED STATES under *Legislation*; articles on States under *Legislation*.

Volunteer Activities. See CIVILIAN DEFENSE, OFFICE OF; also, AMERICAN LEGION, RED CROSS; SOCIETIES AND ASSOCIATIONS; articles on churches. For sales of defense bonds and stamps to the public, see PUBLIC FINANCE.

Effects in Other Fields. The effects of the war and the defense program are discussed in one way or another in almost every article in this volume. For example: for rising living costs, see LIVING COSTS AND STANDARDS; for dislocation of employment, see LABOR CONDITIONS; for restrictions on business, see BUSINESS REVIEW; for the conversion of peacetime industry to defense, see MACHINE BUILDING, MOTOR VEHICLES, etc.; for research, see CHEMISTRY, INDUSTRIAL and the other sciences; for war psychosis, see PSYCHOLOGY; for war risk insurance, see INSURANCE; and so on. Also see the article on each country and territory under *History*; COMMUNISM; FASCISM; PAN AMERICANISM; SOCIALISM.

NATIONAL DEFENSE ADVISORY COMMISSION. Formerly, a United States administrative agency dealing with defense matters. For the agencies now administering its various functions, see NATIONAL DEFENSE AND WAR AGENCIES.

NATIONAL DEFENSE AND WAR AGENCIES. A thoroughgoing reorganization of national defense operations was initiated on Jan. 7, 1941, when the President, by executive order, directed that the activities and agencies of the Advisory Commission to the Council of National Defense should be coordinated through the *Office for Emergency Management*, a division of the Executive Office of the President. The Advisory Commission gradually became inoperative as its functions were absorbed by the new divisions under OEM.

On the same day that the Office for Emergency Management replaced the Advisory Commission as the over-all coordinating defense organization, the *Office of Production Management* (q.v.) was created as the primary operating agency under OEM. OPM was given responsibility for accelerating defense production, supervising the flow of materials into supplies needed by the Army, the Navy, and essential civilian services, planning an adequate labor supply, and coordinating defense purchases.

To deal with the problems arising in the civilian economy as a result of growing defense production, an *Office of Price Administration and Civilian Supply* was set up, also under OEM, on April 11. The civilian supply section was later shifted to OPM, and the name of OPACS was changed to the *Office of Price Administration* (q.v.) on August 28.

In addition to these two principal operating agencies, most of the other new offices which were created to further national defense up to December 8 and to carry on the war after that time were placed within the framework of the Office for Emergency Management. The most important of these, and the dates on which they were set up were as follows (see separate articles on each):

The *Transportation Division*, which had been established as a unit of the Advisory Commission to the Council of National Defense, was placed under OEM on Jan. 7, 1941. On December 18, the Transportation Division was superseded by the *Office of Defense Transportation*.

The *Defense Communications Board*, which had been created in September, 1940, was placed under OEM on Jan. 7, 1941.

The *Division of Defense Housing Coordination* was established Jan. 11, 1941. This agency determines the need for and location of defense housing projects, and coordinates the work of other federal housing agencies.

The *Information Division*, which had been set up under the Advisory Commission to the Council of National Defense, was formally placed within the Office for Emergency Management on Feb. 28, 1941.

The *National Defense Mediation Board* was set up March 19, 1941, to adjust labor disputes in defense industries upon certification by the Secretary of Labor.

The *Division of Defense Aid Reports* was established May 2, 1941, to supervise administration of the Lend-Lease Act. On Oct. 28, 1941, the title of this agency was changed to the *Office of Lend-Lease Administration*.

The *Office of Civilian Defense* was established May 20, 1941, to coordinate preparations for the protection of the civilian population.

The *Office of Scientific Research and Development* was set up June 28, 1941, for the purpose of assuring adequate provision for research on scientific and medical problems relating to national defense.

On July 30, 1941, the *Office of the Coordinator of Commercial and Cultural Relations between the American Republics* was placed under OEM, and

its name was changed to *Office of the Coordinator of Inter-American Affairs*.

The *Supply Priorities and Allocations Board* was created within OEM on Aug. 28, 1941, to establish general policies in regard to the supply and distribution of materials under the defense and war programs.

The *Office of the Coordinator of Health, Welfare, and Related Defense Activities* was placed under OEM Sept. 3, 1941, and its name changed to the *Office of Defense Health and Welfare Services*.

An *Office of Facts and Figures* was established on Oct. 24, 1941, to formulate programs designed to facilitate a widespread and accurate understanding of the status and progress of the national defense effort and of the defense policies and activities of the Government; and to advise with the several departments and agencies of the Government concerning the dissemination of such defense information.

Apart from OEM, several of the Government departments have been given special responsibilities and work to do in connection with defense and the conduct of the war.

Also separate from OEM and reporting directly to the President, the following new agencies have been set up to handle various phases of the war effort: *Selective Service System, Permanent Joint Board on Defense of United States and Canada* (see CANADA); *Coordinator of Information; Board of Economic Warfare*

The organization of the nation for war at the end of the year was therefore concentrated in the hands of the President through the regular Government departments and a few special agencies in the Executive Office of the President, and through the Office for Emergency Management. These were the agencies responsible for the purchase, production, and use of war materials and materials needed for war, whose authorized cost had reached more than seventy-five billion dollars by the end of the year and was already scheduled to go far beyond that figure.

See UNITED STATES under *Defense*. For a brief account of changes made early in 1942, see WAR PRODUCTION BOARD and (for the War Labor Board) LABOR CONDITIONS.

WAYNE COY.

NATIONAL DEFENSE EXPOSITION. See FAIRS, EXPOSITIONS, AND CELEBRATIONS.

NATIONAL DEFENSE MEDIATION BOARD. As America's program of rearmament began to make a real dent in the country's economy in the winter of 1940-41, the upward swing of industrial activity carried with it rises in the cost of living and in the conflicts between labor and management. As is usual in such times, the number of strikes also increased, from 147 in December, 1940, to 316 in March, 1941. Man-days lost through strikes rose rapidly from 458,314 in December, 1940, to 1,543,803 in March, 1941. (See the article on LABOR CONDITIONS under *Strikes*.)

On Mar. 19, 1941, the President created the National Defense Mediation Board by Executive Order. It was given the task of adjusting labor disputes in defense industries, and the following three steps were outlined in the Executive Order: (1) Collective bargaining between the parties before the Board; (2) Voluntary arbitration, and (3) In case both of these failed, the Board was empowered to make findings of fact and public recommendations. All disputes had to be certified to the Board by the Secretary of Labor and could only be done so after

the U.S. Conciliation Service had been unable to settle them.

Originally composed of 11 members—4 from management, 4 from labor, and 3 representing the public—the Board's membership was increased from time to time by the addition of alternates for each of the three groups until it reached a top of 41. Labor's representation was equally divided between the American Federation of Labor and the Congress of Industrial Organizations. No representatives from the railroad brotherhoods were on the Board since all railway labor disputes are handled by the National Mediation Board under the terms of the Railway Labor Act. William H. Davis, originally named as Vice Chairman, succeeded Dr. Clarence A. Dykstra as Chairman when the latter resigned July 1. The Executive Order empowered panels of the Board composed of representatives of each of the three groups to exercise all the functions given the full Board for settling disputes. This authority was exercised in all except two cases, which were referred to the full Board for final decision.

During the Board's existence, 114 cases involving a total of 1,190,789 men were certified to it. Only 22 cases involving 98,098 men were still unsettled when the Board was replaced by the National War Labor Board Jan. 12, 1942. The Board's success in averting threatened strikes or in obtaining resumption of production when strikes were certified was even greater than its ability to dispose finally of disputes. Inheriting a large number of unsettled strikes when it was first created, the Board gradually whittled these down until by November 24, 100 per cent of the men in pending cases were at work. This record of a calendar free from strikes was maintained from then until the Board was abolished. During the last few months of its existence, all the Board had to do to get a strike called off or postponed was to promise the parties a swift and fair hearing. In this way it established by voluntary methods a cooling-off period in defense industries which many persons had proposed be done through legislation.

The President of the United States was asked to intervene in four cases where the Board failed to settle controversies. In the first, involving the North American Aviation, Inc., Federal troops were used to open the plant which had been shut down by the union in violation of an agreement to maintain production during mediation before the Board. When two companies, Federal Shipbuilding and Drydock Co., and Air Associates, Inc., refused to accept Board recommendations, and strikes ensued, the government seized their plants. The fourth case, the captive mine dispute, was settled by acceptance of presidentially-offered arbitration after the union had rejected the Board's recommendation. All plants had been returned to their owners by Jan. 7, 1942.

On November 11, the C.I.O. members of the Board resigned in a body in protest over the Board's decision denying the union shop to the United Mine Workers in the captive mine case. From that time on, the Board did not hear any cases involving C.I.O. unions though it proceeded as usual with all other disputes. On December 17, the President convened a labor-management conference composed of 12 representatives from each group, and asked them to make a unanimous agreement for settling all industrial disputes peacefully for the duration of the war. On December 23, the conference announced that it had agreed on this point and asked the President to set up machinery for the peaceful settlement of disputes. On Jan. 12, 1942, pursuant to this agreement, the President established by

Executive Order the National War Labor Board to be composed of 12 representatives equally divided between those representing the public, management, and labor. The Board was empowered to take over all unsettled disputes still on the Mediation Board's calendar and the latter Board was abolished. William H. Davis was named chairman of the new Board. See *LABOR CONDITIONS under Governments and Labor Disputes* and also under *Strikes*.

WILLIAM H. DAVIS.

NATIONAL DEFENSE RESEARCH COUNCIL (NDRC). See *CHEMISTRY, PURE* under *Research for Defense*.

NATIONAL GALLERY OF ART. See *ART* under *Museums*.

NATIONAL GUARD. See *MILITARY PROGRESS*.

NATIONAL INCOME. Income payments to individuals in the United States, according to the U.S. Department of Commerce, totaled \$80,473,000,000 for the first eleven months of 1941, as compared with \$68,172,000,000 during the corresponding period in 1940. This increase of 18 per cent, following an increase of 7.6 per cent registered during the preceding year, indicated that the national income in 1941 would reach the highest figure in history, well above the \$83,400,000,000 of the previous peak year, 1929.

The greatest increase in 1941 (22 per cent) was in the category of salaries and wages, and especially in the field of manufacturing where payrolls rose 40 per cent. During the latter part of the year, however, the increase was limited to relatively few industries with others suffering from shortages of raw materials; the shipbuilding payroll, for example, almost trebled in November, 1941, as compared with November, 1940, and in the aircraft industry it was more than two and one-half times as high. The net income of farm operators increased almost one-third in the eleven-month period, with seasonal declines smaller than usual. This is of interest when it is recalled that a decline in income from agriculture appears as the most significant change when the national income is reviewed over a period of two decades.

Final figures for 1940 showed a total national income of \$76,035,000,000. Income by industrial origin was estimated as follows (in billions of dollars): Agriculture, 6.0; manufacturing, 19.2; construction, 2.4; transportation, 5.3; trade, 10.1; finance, 6.2; government, 10.2; service, 9.3; other, 7.3; total 76.0. The most significant change within the preceding two decades was the decline in income from agriculture, which totaled over \$11,000,000,000 in 1919. See *LIVING COSTS AND STANDARDS*.

NATIONAL INVENTORS COUNCIL. Created in August, 1940, by the Secretary of Commerce, the Council is a central clearing house for inventions and suggestions deemed valuable to the war effort. Since its creation, more than 40,000 inventions have been carefully examined and evaluated, a surprisingly large number of which have proved meritorious and useful.

Dr. Charles F. Kettering, President of the General Motors Research Corporation, was chosen as Chairman and other members include eminent scientists, inventors, Government officials, and business men well versed in the industrial application of new devices, all of whom serve without compensation. The Council staff of approximately 35 employees, includes a corps of competent engineers and technical experts—each a specialist in his own

field—thus assuring competent preliminary evaluation of all inventions received.

Proposals received by the Council are first studied by these engineers, and those that obviously possess no merit receive little if any further consideration. However, those appearing useful are placed in the hands of one of the twelve appropriate Committee Chairmen charged with handling such matters. These Committees are as follows: 1. Ordnance and Firearms; 2. Land Transportation and Armored Vehicles, 3. Aeronautics; 4. Remote Control Devices; 5. Instruments; 6. Naval Warfare; 7. Signals and Communications; 8. Chemicals and Chemical Warfare; 9. Internal Combustion Engines; 10. Metals and Metallurgy; 11. Forts, Fortifications, Other Structures, and Camouflage; 12. Clothing, Sanitation, Health, and Commissariat.

If the Committee Chairman concurs with the engineer, the proposal is then brought before the Council as a whole. Affirmative action is followed by transmitting the proposal to the proper using agency, together with reasons for such disposition. Additionally, a network of liaison officers has been established between the Council and various branches of the War and Navy Departments and Office of Production Management.

The Council has made every effort to acquaint the public with its functions, and all ideas are carefully and sympathetically considered, regardless of how radical they may appear at first glance. It is felt that one really important invention may contribute largely to the winning of the war, and both Council members and staff employes are constantly on the alert for all ideas that may help in any possible manner.

CHARLES F. KETTERING.

NATIONAL LABOR RELATIONS BOARD (NLRB). Despite the overall increase in the National Labor Relation Board's current work (25 per cent over the year 1940), its staff of approximately 750 people have closed more cases than ever before and have succeeded in settling more of them informally, that is, without the necessity of going to public hearing and decision. An example of the increased ability to obtain agreement of employers and unions to settlement of cases involving the question of who is entitled to represent employees (representation cases) appears in the fact that 2,050 such agreements were reached in 1941, more than half the representation cases closed, as compared with 38 per cent during the previous year. The total of 3,698 representation cases closed in 1941 is higher than in any previous year in the Board's history.

The 9,151 charges and petitions received during the last fiscal year represent the second highest case load in the Board's history. The peak was in 1937-38 when more than 10,000 cases came to the Board following validation of the Act by the Supreme Court. The next two years saw a marked decline in incoming cases, so that 1941 represents a 50 per cent increase over 1940. The 9,151 cases filed with the Board last year involved 2,373,361 workers. The acceleration in the number of new cases coming to the Board followed closely the rising curve of defense production. The incoming cases during the last quarter of the fiscal year were nearly twice those during the first quarter.

Within this 50 per cent absolute increase in cases brought to the Board is an interesting relative shift between representation and complaint cases. For the five preceding years of Board history representation cases averaged about one-third and complaint cases two-thirds of all cases. But in 1941 the number of representation cases increased almost

100 per cent over 1940, while at the same time complaint cases were only increased by 22 per cent (4,334 compared with 2,243). Unions affiliated with the American Federation of Labor filed the largest number of charges and petitions—4,261. Unions affiliated with the Congress of Industrial Organizations filed 3,740. Other unions, either organized on a national basis or organized among the employees of a single employer filed 595; while individuals filed 476 charges.

The conduct of secret ballot elections is one of the chief functions of the Board in effectuating the purposes of the Act. Last year the Board conducted 2,566 elections or pay roll checks, compared with 1,192 for the previous year. Of this total, A.F.L. unions participated in 1,396 and won 925 or 66 per cent. C.I.O. unions participated in 1,414, winning 991 or 70 per cent. A total of 729,737 valid votes were cast in elections during the year, with A.F.L. unions polling 48.3 per cent and C.I.O. unions polling 61.7 per cent.

Board orders are not self-enforcing. The Board may seek enforcement, and any person aggrieved may seek review of the order in the Federal Circuit Court of Appeals. Ten cases involving the Board were decided by the Supreme Court during the past fiscal year. In four the Board's order was sustained in full, in one the order was sustained as modified slightly by the court below; and in four others the Board's order was modified either slightly or more substantially; in the remaining case the Supreme Court, upon procedural grounds, declined to pass upon the order.

The various Circuit Courts of Appeals rendered 124 decisions on Board orders in unfair labor practice cases, an increase of approximately 97 per cent over the 63 decisions rendered in the previous year, and an increase of about 226 per cent over the 38 decisions rendered in 1939. Of the cases decided in the present year, Board orders were enforced in full in 65 cases and were enforced as modified in 36 cases. In 23 cases Board orders were set aside, although in 3 decisions the cases were remanded to the Board for further proceedings; in one case the proceedings were remanded by the Supreme Court to the Court below for the redetermination of the case on the record as certified by the Board; in another the case settled prior to the Board's filing of a petition for certiorari; and in still another the case was reopened on motion of the Court and resulted in a modification of the Board's order.

During the year the Board created a Field Division responsible for administrative work in the field offices and for administrative case work, and to coordinate the work of the field with the Washington staff of the Board. To provide the most expeditious handling possible and to secure accuracy the Director of the Field Division, with the aid of three Assistant Directors, handles requests from the 22 Regional Offices for authorization to proceed in complaint and representation cases. The Board also appointed an Executive Secretary to act as official Secretary to the Board, to handle administrative matters not under the Field Division. See LABOR CONDITIONS under the section on *Collective Bargaining*.

NATIONAL MEDIATION BOARD. See RAILWAYS.

NATIONAL PARK SERVICE. During 1941, its silver jubilee year, the National Park Service carried on an intensive interpretive program to familiarize Americans with the background and significance of the national parks and other scenic and historic units of the Federal Park System, thereby contrib-

uting abundantly to the building and maintenance of national unity and morale.

Approximately 21,050,000 persons visited one or more of the 164 units of the Federal Park System during the 1941 travel season. Most of these travelers participated in the campfire talks, nature hikes, auto caravans, and other interpretive features conducted by trained naturalists and historians.

At the close of 1941 the 21,609,290-acre Federal Park System included 26 national parks, 82 national monuments, and 56 other nationally important scenic and historic areas. During the year three national historic sites were designated by the Secretary of the Interior under authority of the Historic Sites Act of Aug. 21, 1935. One—Fort Raleigh in North Carolina, scene of the first attempted English settlement in the United States—was included in the Federal Park System. The other two—the old Spanish Mission San Jose de Aguayo, near San Antonio, Tex., and the home in Oregon City, Oreg., of the Pacific Northwest pioneer, Dr. John McLoughlin—are still private properties, but the National Park Service is cooperating in their preservation and use, under terms of an agreement entered into with the owners.

Appropriation by the Texas legislature of \$1,500,000 for the purchase of lands within the Big Bend National Park Project was a major conservation development of the year 1941. Congress in 1935 authorized establishment of this park as a unit of the Federal Park System at such time as full title to 788,682 acres within its specified boundaries has been vested in the Federal Government. Mexican authorities are interested in reserving several hundred thousand acres of land for park purposes on their side of the border, the two sections to form a great international park.

Establishment of still another park area on the United States-Mexico border, to be known as the Coronado International Memorial, was authorized by Congress in August, 1941. The setting aside of United States lands for this memorial is dependent upon similar action being taken by the Republic of Mexico.

Included in the 1941 roster of National Park Service activities are the following: Assistance given defense agencies in the planning and development of recreational facilities for men in the armed forces, in the study of soil mechanics and foundation engineering, and in the preparation of recreational area maps for the Army's morale division; collaboration with eight Southern States and with various Federal agencies in a recreational resources survey of the Tennessee and Cumberland River watersheds; and completion or partial construction of approximately 310 miles of the 485-mile Blue Ridge Parkway connecting Shenandoah and Great Smoky Mountains National Parks.

For a list of the National Parks, see YEAR BOOK for 1940.

NEWTON B. DRURY.

NATIONAL RAILROAD ADJUSTMENT BOARD. See RAILWAYS.

NATIONAL RESOURCES PLANNING BOARD. See CONSTRUCTION INDUSTRY; PLANNING.

NATIONAL WAR LABOR BOARD. See WAR LABOR BOARD.

NATIONAL YOUTH ADMINISTRATION (NYA). To meet the increasing shortages of experienced and trained labor the National Youth Administration during the fiscal year ending June 30, 1941, trained 907,946 young men and women for jobs in the war produc-

tion industries. Under the impetus of the war program a large part of the out-of-school program of the NYA has been concentrated on training young people for employment in the vital industries—aircraft production, machine tools, and shipbuilding.

Because of the occupational requirements of the war industries, the Administration is emphasizing work experience in the metal and mechanical fields. In workshops located throughout the country NYA youth gain experience in machine operation, sheet metal work, welding, riveting, and forging. While they are acquiring the basic skills, NYA youth are also producing goods and services for public agencies, including the U.S. Army and U.S. Navy.

Almost half of the young people employed by the National Youth Administration are young women. Their activities include machine work, industrial sewing, clerical work, hospital assistance, and the preparation of foods.

During the past twelve months more than 400,000 young people who were given their practical experience and training by the NYA went into jobs in private industry, primarily industries concerned with war production and national defense.

In addition to the out-of-school program the NYA employs needy students on part-time jobs in 28,000 high schools and 1,700 colleges and graduate institutions. Between July 1, 1940 and June 30, 1941, 605,160 students who otherwise would have been unable to continue their education were employed by the NYA. Many of these students are preparing for technical and professional fields essential to the national defense.

The National Youth Administration was first set up on June 26, 1935 under Executive Order No. 7086 as a part of the Works Progress Administration. On July 1, 1939 it was transferred to the Federal Security Agency through Reorganization Plan I. It is now functioning under the provisions of the Labor Federal Security Appropriations Act of 1941.

In each State and also in the District of Columbia, Hawaii, Alaska, and Puerto Rico there is a State Administrator who has a major share in the formation of policy. A National Advisory Committee representing labor, industry, agriculture, education, and religion advises the President directly on policies and activities affecting the NYA. Local and state advisory committees help fit the program to local needs.

AUBREY WILLIAMS.

NATURALIZATION. See IMMIGRATION, EMIGRATION, AND NATURALIZATION.

NAURU. See AUSTRALIA under *Area and Population and History*.

NAVAL PROGRESS. The extension of the European war into a world conflict involving all the important naval powers (see WORLD WAR) has meant a shift of interest from peacetime construction and expansion to the performance of ships and weapons in the final test of war. At the same time the extension of the conflict has given increased importance to control of the seas, as the barrier and at the same time the great avenue of communication between the continents, and to the achievement of such control, whether by weapons operating upon, above, or beneath the surface. This struggle for control of sea communications has centered in three areas; the battle of the Atlantic to maintain an uninterrupted flow of munitions, supplies, and perhaps ultimately man power to Britain; the Mediterranean conflict, where in the African campaigns both sides have been almost solely dependent on sea communications; and finally the war in the Pacific, where

again the course of the conflict has hinged vitally on sea control. The warfare in each of these areas, which will be considered separately, has tested the efficacy of all types of naval armament, and demonstrated in particular the immensely increased present importance of air power as an essential element of sea power.

Battle of the Atlantic. The critical situation in the Atlantic became evident with the heavy shipping losses during the spring months, rising to 589,273 tons in April and over 1,400,000 tons for the second quarter-year. Most of the losses—two-thirds, according to a statement of the German naval chief Admiral Raeder—were the result of submarine warfare, which, as indicated by the threats of Nazi leaders, was pushed to full intensity in these early months. Later, according to an Admiralty estimate, the losses from submarines were reduced to about 40 per cent, the rest being due to mines, aircraft, and surface raiders.

With the general marshalling of British traffic in convoys, the "wolf pack" tactics of German submarines was further developed. Aircraft—or U-boats in the outer areas—were employed to spot and trail convoys and to call in other submarines for concerted attacks. These might continue for more than one night, the U-boats attacking in succession and firing at random on the flank of the convoy, though on occasions a more daring submarine would strike directly through the convoy formation, firing its torpedoes on each side till the supply was exhausted. Aircraft attacks were also a serious menace, since, without the use of Eire bases, fighter planes of the British Coastal Command could offer little opposition to long-range Focke-Wulf bombers operating from Norway and the French coast.

In the second half of the year, though exact figures were not revealed, Admiralty statements showed that total tonnage losses were cut by nearly two-thirds. Notable among the causes for this decline was the further extension of American patrol areas from April on, along with the sending of forces to Iceland in July, and the definite orders in September that American naval vessels should engage submarines carrying on unrestricted commerce warfare. Furthermore, after July German aircraft and some submarines were diverted to the Russian campaign, and the R.A.F. struck heavily at German naval bases and construction plants.

Another effective counter-measure, aside from additional corvette and destroyer escorts, was the increase of flying patrols in British waters and the conversion of merchant vessels into catapult aircraft carriers for use with the convoys. Aircraft thus put into service proved a potent menace to both enemy bombers and U-boats. Radio and supersonic detection devices were also further developed, though little of this progress could be revealed. In England the convoy system was highly organized, with an admiral in command of the western approaches to the British Isles, 39 retired officers as commodores commanding ocean convoys, and other commanders drawn from the merchant marine and naval reserve.

A typical convoy engagement was that of December 17–21, in which according to the Admiralty account, on the first day a U-boat was brought to the surface by depth bombs and blown apart by gunfire, while two Focke-Wulf bombers were driven off by naval planes. The next day another submarine was finished off in similar fashion, and the destroyer *Stanley* (ex-U.S. *McCalla*) was sunk by torpedo. On the 19th the escort sloop *Stork* rammed a third U-boat, and the Focke-Wulfs, returning to the attack, lost two planes shot down by fighters from the converted aircraft carrier *Audacity* (ex-

German merchantship *Hanover*). After two more days of fighting, in which the *Audacity* was also sunk, the attacks were finally ended by aircraft reinforcements from the British coast.

In another extraordinary encounter in September a Hudson aircraft of the Coastal Command disabled the *U-570* so that it could not dive. The *U-boat* hoisted a white flag, and was then watched by the Hudson, and later by a Catalina flying boat, until some 13 hours later a British destroyer took it in tow.

Commerce destruction by German submarines and aircraft was supplemented by surface raiders in distant waters and by attempted forays of major naval vessels. In March the battle cruisers *Scharnhorst* and *Gneisenau* were reported in the Atlantic and joining with *U-boats* in concerted attacks on shipping, but after March 28 they were penned up in Brest, where they were subjected to repeated R.A.F. bombings. The *Scharnhorst* on July 22 was still able to move to the port of La Pallice, 240 miles to southward. On the 24th, heavy day and night air raids, with fighters and bombers, including Boeing fortresses, were directed against the ships in both ports. The *Scharnhorst* was declared to have received at least two direct hits and her sister ship seven, while 15 bombers and 7 fighters of the British and an equal number of German fighters were shot down in the mêlée. Later the *Scharnhorst* got back to Brest, and at last accounts the two ships, with the cruiser *Prince Eugen* which had joined them, remained afloat—a testimony, even though they were badly damaged, to the excellence of German ship construction and the possibilities of anti-aircraft defense.

On May 21 aircraft reported the new German battleship *Bismarck* and the 10,000-ton cruiser *Prince Eugen* about to put to sea from Bergen, Norway. Two nights later they were located and trailed by British scouts in the Denmark Strait between Greenland and Iceland, and in an engagement on the 24th with the *Prince of Wales* and *Hood*, the *Bismarck* sank the *Hood* at 23,000 yards within four minutes of opening fire. The destruction of this big 42,100 ton battle cruiser of post-Jutland design with 12-inch armor, though attributed to a "lucky hit," raised once more questions as to the efficacy of her type and of British protective measures, especially against transmission of shell explosions to the magazines.

That night, aircraft from the carrier *Victorious* succeeded in scoring a torpedo hit which slowed down the *Bismarck*, and though both German ships eluded their pursuers in the fog and darkness, and the *Prince Eugen* got away to Brest, the *Bismarck* was located 30 hours later by a Catalina scouting plane some 500 miles west of the Channel. Two torpedo hits from aircraft launched by the *Ark Royal* damaged her propellers and rudder, and after a hail of high explosive shell from the *Rodney* and *King George V*, and a half dozen or more torpedo hits from planes and destroyers, the wrecked ship was finished off on the morning of the 27th by the cruiser *Dorsetshire* with torpedos. The action demonstrated the extraordinary staying qualities of a ship with modern protection and compartmentation, and the value of aircraft scouting and preliminary torpedo damage, making possible the battleship attack. Thus within a week was ended the mission, presumably of commerce destruction, of one of the world's most powerful battleships. Six supply ships sent out for her use were later intercepted.

Mediterranean Warfare. In the Mediterranean a desperate sea and air conflict was waged to maintain British east-west communications with Egypt

and Axis communications with Libya. While throughout the year it remained beyond the ability of the British to halt the passage of well-guarded enemy convoys, yet the fact that the British line through the Mediterranean narrows was never completely blocked stands as a remarkable example of the staying qualities of the British navy and the shortcomings of Italy's vaunted strength in this area. The two British advances into Libya at the beginning and the end of the year, as well as the operations in Greece, were all based upon and made possible by sea power, and in both African campaigns the Navy rendered invaluable service in transport of water, munitions, and prisoners and bombardment of coastal strongholds, supporting the army's right flank. In fact both campaigns demonstrated the essential need of close integration of all arms—sea, land, and air—in present-day war.

A crucial test of sea control came in the second week of January when some 40 or 50 German Stuka bombers, which had come as a reinforcement to the Italians, joined the latter's torpedo craft in an all-day attack on a British convoy. In groups of three the Stukas dived almost vertically to as low as 100 feet. The cruiser *Southampton* was sunk, and the carrier *Illustrious*, with planes still aboard, was nearly wrecked by a 1,000-lb. bomb. Though she made Malta under her own power, she was later laid up till autumn in Norfolk, Va., for repairs. During this period there was a considerable diversion of Egyptian supplies to the Cape route, but the threat of the German bombers was afterward diminished by heavy losses in repeated attacks on Malta and by a British raid on their base. In these months neither Italian ships nor aircraft were a serious menace. On February 9 the Gibraltar Squadron, including the *Malaya* and *Ark Royal*, openly bombarded Genoa harbor works for twenty minutes at dawn, and on March 28 in the action of Cape Matapan the Italian fleet suffered its most serious blow in the war.

Even the briefest account of this involved battle in the Ionian Sea reveals its significance as an example of effective air reconnaissance and, in the words of the Admiralty, "the first skillful coordination of naval operations with attacks launched by aircraft, resulting in the enemy's speed being reduced and our main units being able to force action upon a reluctant enemy." On March 27 aircraft scouts radioed to Alexandria the presence of an Italian squadron of 3 battleships, 11 cruisers, and 14 destroyers off Sicily, bound southeastward and apparently bent on a thrust at British traffic with Greece. The squadron later separated, with the battleship *Vittorio Veneto*, 6 cruisers, and 7 destroyers in the more southerly division. The other had no part in the battle. The opposing force led out of Alexandria by Admiral Sir Andrew Cunningham included the battleships *Warspite* (flagship), *Valiant*, and *Barham*, the new aircraft carrier *Formidable*, 11 cruisers, and 14 destroyers, together with a number of Greek destroyers which later joined in the operation.

Following contacts on the morning of the 28th by the cruiser forces, and successive advances and withdrawals suggestive of the early moves at Jutland, a series of attacks were launched during the afternoon by torpedo planes from the *Formidable*, and others by R.A.F. bombers. At the first attack the Italians turned back, but three hits were made on the *Vittorio* which slowed her speed to 15 knots, and others were claimed on the cruisers.

At 10:10 p.m., as the British battle fleet came up with the enemy, an Italian cruiser was reported 3

miles to port of the fleet's course. Only a few minutes later a searchlight from the destroyer *Greyhound* lighted up other cruisers hardly 4,000 yards distant on the battleships' starboard bow. Within five minutes the 10,000-ton *Fiume* and next her sister ship *Zara* were wrecked by accurate salvos from the *Warspite* and her consorts at this close range. The *Pola*, the ship to port, was sunk by torpedo after the saving of part of her crew. At this point the British main force withdrew to avoid a torpedo attack, in which two Italian destroyers met their end. The British claimed also the sinking of a smaller cruiser and another destroyer. The *Vittorio*, badly damaged under water, had meantime limped away toward the Italian coast. In the early stages of the action, better provision for air scouting might have given the Italians more timely warning of the heavy opposition; and the Italian ships were evidently weak also in anti-aircraft defense. The loss of the three big 8-inch gun cruisers was a severe blow, and the fourth and last of this class, the *Gorizia*, was reported torpedoed at the close of July.

In the British withdrawal from Greece at the close of April, and more notably in the Cretan operations a month later, the conditions at Cape Matapan were reversed, and British naval forces suffered from inadequate air support and an overwhelming shore-based enemy air power. The evacuation from Greece was creditably accomplished with the loss of but two destroyers and four transports, only one of which was loaded. In the German attack on Crete—a first instance, if Norway be excepted, of an air-supported overseas invasion in the face of superior surface naval strength—the movement of troops was actually, in the first stages, accomplished by air, since the British navy effectively held up surface transport till its withdrawal from the north of the island was made necessary by the swarm of unopposed enemy planes. A novel German device during the attack was the use of gliders towed by aircraft for the transport of troops.

In these operations the British lost four cruisers and six destroyers. The cruisers were the *Fiji* (8,000 tons), the *Gloucester* (9,400 tons), the *York* (8,250 tons) under repair at Suda Bay, and the small anti-aircraft cruiser *Calcutta*, sunk during the final evacuation. Of the destroyers the *Juno*, *Kashmir*, and *Kelly* were among the best in the service. The *Greyhound*, *Hereward*, and *Imperial* were older boats of 1,300–1,400 tons. The battleship *Warspite* was so badly damaged as to be sent for repair to the American West Coast.

Subsequent British warfare on Axis supply lines to Africa, according to a statement of Admiral Cunningham in October, resulted in damage "up to 50 per cent of all convoys." Most of this injury was inflicted by submarines and by aircraft of the Fleet Air Arm and R.A.F. Out of one heavily guarded convoy which consisted of three large liners, a British submarine in September reported the sinking of two liners, one of them believed to have been the *Vulcania* of 24,469 tons, and damage to a third.

An Italian torpedo-plane attack on a British convoy in the same waters at the close of September resulted in the shooting down of 10 Italian planes, 6 by ships' guns and 4 by aircraft from the *Ark Royal*. One torpedo hit on the battleship *Nelson* reduced her speed to 15 knots, and one ship of the convoy, too badly injured to be taken in tow, was sunk by the escort. The best success registered by Axis submarines was the torpedoing of the *Ark Royal* on November 13, some 50 miles east of Gibraltar. Though taken in tow, the carrier sank next day, after the rescue of most of her crew. Often

previously reported sunk, this famous ship had taken part in the search for the *Graf Spee* in 1939, in the operations off Norway, in the bombardment of Genoa in February, 1941, in the chase of the *Bismarck*, and again in the Mediterranean as an effective weapon, with her planes, for commerce defense and destruction.

Warfare in the Pacific. In the Pacific, the air attack on Pearl Harbor on December 7, prior to a war declaration, had the effect for a period of strengthening Japanese sea control in the eastern area, and facilitated the landing operations immediately undertaken in Malaya, the Philippines, and later in Dutch, British, and American island possessions. These operations, however, were not accomplished without very serious losses of naval vessels and planes. At Wake Island alone, reports from the garrison showed the destruction, between December 8 and December 22, of one Japanese cruiser, four destroyers, a submarine, and a gunboat. One of these, in addition to numerous Japanese aircraft, was destroyed by the five planes available to the Marine Aviation unit, after the destruction of seven of its own grounded planes in the first attack. The remaining six ships were sunk by 5- and 3-inch guns of the Marine Battalion on shore. Other Japanese ship losses are noted later under the subheadings *Netherlands, Japan, and United States*.

The American losses at Pearl Harbor, as given in Secretary Knox' report of December 15, were the battleship *Arizona* of 1916 date, sunk by a bomb which went down the stack; the old target ship *Utah* (1911); the three destroyers *Cassin* (1936), *Shaw* (1936), and *Downes* (1937), efficient ships of 1,500 tons, and the old mine layer *Oglala* of 4,200 tons. The battleship *Oklahoma* was capsized but could be righted and repaired. Details of damage to other ships were not given, though it was stated that repairs on some would require from a week to several months, and that the naval dry docks were not seriously injured. Losses of personnel were: officers, 91 dead, 20 wounded; enlisted men 2,638 dead and 636 wounded.

The Japanese lost three submarines, all of the "baby" type. One of these was sunk by a patrol plane and a destroyer outside the harbor, but the news of this which reached the base watch officer at 7:12 a.m. was not taken as a warning. The other two were destroyed within the harbor, the protective net for which had been opened for mine sweepers at 5 a.m. and not closed thereafter. In the aircraft attack from 7:55 to 11:00, launched primarily against ships and airfields, the Japanese lost 41 out of an estimated total of 150 to 200 planes engaged. The fact that all the planes destroyed were of the single motor type indicated that the entire assault was made from aircraft carriers, of which three or four were probably used, together with surface escorts. The report of the special investigation commission indicated that although definite warning of the critical situation had come from Washington on November 27 and later, no information had been given by Naval Intelligence regarding movements of Japanese carriers, and officers in Hawaii had regarded an air raid as unlikely. Neither a naval distant reconnaissance nor an army inshore air patrol was operating on the date of the attack. A recently installed aircraft warning system was operated from 4 to 7 a.m., but the warning heard at 7:05 by an inexperienced operator was disregarded. These conditions were known by the Japanese, who also provided their fliers with accurate charts showing the location of ships, airfields, and other harbor installations.

Although the Japanese declarations of war on

the United States, Britain, and the Netherlands was made on December 7, the Netherlands Indies authorities, rendered suspicious by the movements of Japanese transports, had naval forces at sea as early as November 30. One Dutch submarine, later destroyed by mine with but one survivor, was credited with the sinking of four loaded troop transports off the east coast of Malaya on the night after war was declared.

The most serious loss affecting naval strength in the Far East was that of the 35,000-ton British battleship *Prince of Wales* and the 32,000-ton battle cruiser *Repulse*. Operating east of Malaya without air support, these ships were sighted by Japanese aircraft on the 9th and heavily attacked by torpedo-planes on the following day. In the first action between 11:10 and 12:10 the *Repulse* was reported to have avoided 19 torpedoes. In the second, which soon followed, she was struck twice and quickly sank. The battleship was also sunk in the second attack. Since destroyers in rescue work were not fired on, the loss of lives was limited.

This and other actions already recounted indicate the continued vulnerability to torpedo-plane attack of ships unsupported by aircraft, though, as shown in certain engagements in the Mediterranean, even such attacks may be fought off by skillful use of anti-aircraft fire. The lesson to be drawn, however, is not separation of the air and naval arms, but closer coordination of all weapons applicable to sea defense, together with an ever-increased need for speed and alertness in adapting construction and strategy to new developments in warfare.

Comparative Naval Strength. In view of incomplete reports of new construction from the belligerent nations, and the very general practice of concealing or delaying reports of losses, some of the figures in the accompanying table must be regarded as approximations only, based on all data available. In preparation of the table, reports and estimates from many sources have been given careful study. Losses, so far as known, have been deducted up to July 1, 1941, and the figures, as of that date, may be regarded as an adequate working basis for comparisons of naval strength. Further information regarding naval activities in the different countries follows.

Argentina. The destroyer *Corrientes* of the Argentine navy was lost on October 3 by collision with the cruiser *Almirante Brown* during exercises. The *Corrientes*, one of six sister ships, was completed in England in 1937. She was of 1,375 tons displacement, with a speed of 35.5 knots. The *Almirante Brown* is an Italian built cruiser of 6,800 tons.

In addition to the nine small 550-ton mine-sweepers recently completed in Argentina, the naval transport *Ushuaia*, of 1,275 tons and 12-knot speed, was launched in August from the National Shipyard at Rio Santiago. This yard, the most complete in the country in shops and trained personnel, is to be expanded to a capacity for construction of naval and merchant ships up to 10,000 tons. It is estimated that in the *Armada Nacional* and the two private yards of Argentina small ships can be built more cheaply than in the United States, but hull plates and engines for naval vessels must be imported.

Australia. Like Canada, Australia has engaged in an extensive naval shipbuilding program for her own and Empire service. Of the five *Tribal* class destroyers under construction in Australia, two, the *Arunta* and *Warramunga*, were launched in 1940, and it was expected that all five would be in service by the summer of 1942. Three other destroyers are

to be built at the Cockatoo yard in Sydney, and some 50 escort vessels, 20 of which are for the British, are under way at this and other Australian yards. The escort craft are described as stout little vessels of about 800 tons, suitable for patrol and anti-submarine duty as well as mine-sweeping if necessary and for covering great distances in all kinds of weather. Two escort sloops of 1,060 tons were delivered in 1940, and a dozen motor torpedo boats have also been built.

Being rushed to completion in 1942 is the new graving dock in Sydney, which will be 1,100 feet long and capable of handling any of the big British or American battleships now under design. Of equal importance, in view of the threat to Singapore, are the increased fortifications and fleet facilities at the naval base of Darwin in northern Australia. Distant 1,967 sea miles southeast from Singapore, Darwin will need air protection, but is strategically located also for launching long range bomber attacks in the eastern Pacific area.

The chief loss suffered by the Royal Australian Navy in the course of the year was that of the 6,850-ton cruiser *Sydney*, which mysteriously disappeared after having sunk a German surface raider. German survivors declared that when the *Sydney* left the scene she was on fire amidships, but it is difficult to believe that she could have incurred serious injury in such an engagement. The personnel of the Australian navy numbered over 15,000 in 1941 and was being steadily increased.

Brazil. A third Brazilian-built destroyer, the *Greenhalgh*, of 1,500 tons, was launched at Rio de Janeiro in July of this year. She and two sister ships, which went afloat in July and December of 1940, follow the design of the United States *Mahan* class. Six other destroyers, closely resembling the British *Hero* class, are on the stocks. In the field of aviation Brazil has stimulated progress by the establishment of a separate Air Ministry, the first in the Western Hemisphere, to coordinate all army, naval, and civil flying. There are now over 565 airports and landing fields in the country, and all airlines have been freed from Axis control. To supplement planes purchased in the United States, Brazil now has two aircraft factories in production.

Canada. The extent of naval construction in Canada for her own and Empire needs was indicated by the announcement in October that of an original program calling for 70 corvettes, between 60 and 65 had already been launched. These were under construction at numerous yards on the coast, St. Lawrence, and Great Lakes. Twelve of the mine sweepers ordered by the British Government were nearing completion in Vancouver and Toronto. They were to be 105 feet long and built of wood. The factory of the Canadian Power Boat Company in Montreal, equipped for the rapid construction of small high-speed naval craft, completed fifteen 70-foot motor torpedo boats for the Netherlands Indies, and this year was in position to turn out M.T.B.'s at the rate of at least one boat each week. These boats have a top speed of 70 knots and a range of 1,000 miles at 22 knots. They carry four 18-inch torpedoes and depth charges.

In accordance with recommendations of the Canada-United States Defense Board for the defense of Alaska and the Pacific coast, work was begun in the spring on a series of a dozen or more air bases and refueling plants extending northward toward Alaska on both sides of the Rockies. The personnel of the Canadian Navy was expected to reach at least 6,000 by the close of 1941. From a pre-war total of 13, Canada's forces afloat now number 250, and within a year will mount to 400.

COMPARATIVE DATA—THE GREAT NAVAL POWERS—AS OF JULY 1, 1941*

Country and type of ships	Commissioned and under No 1,000 tons		Total built		Building	
	No	1,000 tons	No	1,000 tons	No	1,000 tons
United States:						
Capital ships	14 ^a	454	17 ^a	544	17	770
Aircraft carriers	7	155	7	155	12	..
Cruisers (8" guns)	18	171	18	171	14 ^b	..
Cruisers (6" guns)	17	144	19	158	40	..
Destroyers	102 ^a	153	175 ^a	225	197	..
Submarines	47	70	115	115	74	..
Total	205	1,147	351	1,368	354	..
British Empire						
Capital ships	15	474	16	514	7	265
Aircraft carriers	6	90	8	112	3	69
Cruisers (8" guns)	15	146	15	146	..	..
Cruisers (6" guns)	45	366	60	393	..	..
Destroyers ^c	114	171	235 ^c	312	16	24
Submarines ^d	33	40	45	47	..	..
Total	228	1,287	379	1,524	..	..
Japan.						
Capital ships	11 ^d	352	12 ^d	381	10 ^f	330
Aircraft carriers	7 ^e	75	7 ^e	75	3 ^g	51 ^g
Cruisers (8" guns)	12	108	12	108	..	..
Cruisers (6" guns)	18 ^e	122	26 ^e	157	..	..
Destroyers	101 ^e	146	133 ^e	173	..	..
Submarines	60 ^e	82	84 ^e	120	..	..
Total	209	885	274	1,014	..	..
Germany						
Capital ships	5	107	5	107	3	115
Aircraft carriers	1	19	1	19	1 ^h	19 ^h
Cruisers (8" guns)	3	30	3	30	1	10
Cruisers (6" guns)	4	23	4	23	4	28
Destroyers	60	66	60	66	..	..
Submarines	175 ⁱ	88	175 ⁱ	88	..	..
Total	248	333	248	248	..	..
Italy						
Capital ships	5 ^j	129	5 ^j	129	2	70
Aircraft carriers	..	..	..	..	..	..
Cruisers (8" guns)	1 ^k	10	1 ^k	10	..	..
Cruisers (6" guns)	12	62	12	62	14	56
Destroyers	60 ^l	66	95	104	12	15
Submarines	95 ^l	73	105	81	22	25
Total	173	340	218	386	50	166
Russia						
Capital ships	..	..	3 ^l	69	2 ^m	75
Aircraft carriers	1	9	1	9	2	24
Cruisers (8" guns)	3	24	3	24	2	16
Cruisers (6" guns)	4	24	4	24	..	..
Destroyers	27	59	51	89	44	117
Submarines	149	89	160	96	..	..
Total	184	205	222	311	..	..
France (Vichy)						
Capital ships	5 ⁿ	132	5 ⁿ	132	1 ^o	35
Aircraft carriers	2	32	2	32	..	..
Cruisers (8" guns)	7	70	7	70	..	..
Cruisers (6" guns)	11	88	11	88	..	..
Destroyers	52	100	52	100	..	..
Submarines	82	75	82	75	..	..
Total	159	497	159	497	1	35
Free France:						
Capital ships	2	44	2	44	..	..
Aircraft carriers	..	..	..	..	..	..
Cruisers (8" guns)	..	..	..	..	..	..
Cruisers (6" guns)	1	8	1	8	..	..
Destroyers	10	11	10	11	..	..
Submarines	2	4	2	4	..	..
Total	15	67	15	67	..	..
Netherlands:						
Capital ships	..	..	..	..	..	..
Aircraft carriers	..	..	..	..	..	..
Cruisers (8" guns)	..	..	..	..	..	..
Cruisers (6" guns)	5	32	5	32	..	..
Destroyers	8	10	8	10	..	..
Submarines	22	15	22	15	..	..
Total	35	57	35	57	..	..

* Includes 2 battleships, 3 destroyers sunk at Pearl Harbor, Dec. 7, 1941. ^b Includes 6 "super-cruisers" under construction. ^c Includes 60 overage, flush-deck destroyers traded by the United States to Great Britain in exchange for Atlantic bases. ^d Includes battleship *Haruna* sunk by U.S. Army plane off Luzon. ^e Does not include 6 seaplane carriers and unknown number of converted merchant vessels used as carriers. ^f Of these 4 are supposed to be pocket battleships of about 15,000 tons. ^g Includes 1 light cruiser, 4 destroyers, and one submarine sunk by U.S. Marines off Wake Island. ^h This represents the 19,000-ton *Deutschland* which may have been completed. ⁱ This figure is an estimate only. ^j Includes battleship *Conte di Casovra* heavily damaged at Taranto bombing. ^k Represents heavy cruiser *Gorizia*, torpedoed by British in July. ^l Laid down 1909; completed 1914-15. Obsolete design though modernized in some detail *Two* in Baltic, one in Black Sea. ^m 40,000-ton battleship building at Nikolaiev destroyed by Russians before evacuating port. ⁿ Includes 35,000-ton *Richelieu*, 95 per cent complete. ^o Represents the battleship *Jean Bart* lying at Casablanca in unfinished state. ^p Because of incomplete data regarding naval losses and new construction some of the figures in this table are approximations. ^q Britain officially reported 19 destroyers and 13 submarines lost in the entire year of 1941 (not deducted in this table).

Cuba. The Cuban Government found a use for two merchant vessels taken into protective custody in the spring of 1941 by converting them into naval transports. The two vessels were the Italian *Recca* (5,441 tons), renamed *Libertad*, and the Finnish *Koura*, renamed *Caribe*.

Finland. It was reported in October that the coast defense ship *Ilmarinen*, of 3,900 tons, was sunk in action with Soviet batteries defending the naval base at Hango. The *Ilmarinen* and her sister ship *Vainamoinen* formed the backbone of the Finnish Navy. They were built in 1932 and armed with four 10-inch and eight 4.1-inch guns.

France. Of the disintegrated French Navy, the battleship strength includes the *Richelieu*, badly damaged and capable only of harbor defense, at Dakar; the *Jean Bart* at Casablanca, and the *Strasbourg*, *Dunkerque*, *Provence*, and *Bretagne* at Toulon. Of the last four only the *Strasbourg* and *Dunkerque* are reported repaired and now fit for service after the injuries inflicted by the British at Oran. The aircraft carrier *Béarn*, a cruiser, and smaller craft are at Martinique and the training ship *Jeanne d'Arc* near by at Guadeloupe. Three heavy cruisers are at Toulon and the remaining four in British hands at Alexandria. To these may be added perhaps 11 light cruisers in home and colonial ports, including those in the West Indies; probably not more than 27 destroyers out of a pre-war fleet of 59 completed; and in all likelihood fewer than the indicated total of 82 submarines. The destroyer leader *Chevalier Paul*, 2,441 tons, was sunk by the British off the Syrian coast in June, at the conclusion of that campaign three destroyers returned to Toulon, while other light craft were interned by the Turks at Alexandretta. After allowing for accessions to the Free French and losses of other kinds, it seems unlikely that of the 85,000 officers and men in the old navy any large part remain and retain the loyalty and morale needed to turn the Vichy navy into an effective fighting force.

The Free French navy, commanded by Vice Admiral Muselier and operating with the British, includes the battleships *Coubert* and *Paris* of 22,000 tons, 4 destroyers, the big submarine *Surcouf*, and 2 smaller ones (before the loss of the *Narval*), and a considerable number of light auxiliaries. These, with about 400,000 tons of merchant shipping, are manned largely by French crews.

Germany. Following the foray and destruction of the *Bismarck* and the pinning down of the *Gneisenau* and *Scharnhorst* at Brest, discussed earlier, Allied interest turned to the *Bismarck's* sister ship *Admiral von Tirpitz*, another 35,000-ton battleship of at least 30-knot speed. Rumor had it that delay in putting this new ship into service was due to engineering difficulties experienced with her 1,500-lb. high pressure boilers. In view of the pre-occupations of the Russian campaign, and the constant hammering of the R.A.F. on German ports and shipyards, it was presumed that new naval construction had been concentrated chiefly on submarines and other light units for commerce warfare, and that progress had been greatly hampered even in this limited field. New German "T" class torpedo boats were described as 267 feet in length, with 28-foot beam, and a draught of only 6 feet 3 inches, to enable them to pass through mine fields with a minimum risk of damage. With a displacement of 600 tons, they have 6 torpedo tubes, a 4-inch dual purpose gun aft, two 37-mm. anti-aircraft guns, and some machine guns—a scarcely adequate protection against air attack.

Submarine operations in the South Atlantic and

close to the American coast indicate that the Germans have built a considerable number of large submarines of over 1,000 tons, with long cruising radius and good surface speed. Another type of submarine of recent development ranges from 500 to 800 tons, with a cruising radius of 8,000 to 10,000 miles and at least 18 knots speed on the surface. For attack against well guarded convoys and armed merchant ships, this type has high maneuverability and better protection against gunfire than has ordinarily been used. For work in coastal waters the Germans are also building numerous "Minnow" type U-boats of 250 to 300 tons, with three 18-inch tubes and a surface speed of 13 knots. These may be operated with small crews, and their use may thus substantiate British Admiralty reports at the close of the year that Germany is experiencing increased difficulty in supplying her underwater craft with trained men. A clue to losses of both boats and crews is found in the statement of the Admiralty that 1,276 survivors of submarine sinkings were held prisoner. From this figure deduction must be made on the basis of a reported 700 Italian submarine captives, and allowance must also be made for the surrender of the *U-570* and at least one other German boat with their entire crews. Even so, on a liberal allowance of one-third saved from each sunk, the figures would indicate the loss of between 40 and 50 German submarines. Prime Minister Churchill spoke of 74 verified sinkings up to April, and undoubtedly the total number of boats lost up to the close of the year was much greater.

Soviet reports, to be received with considerable reserve, claimed the sinking of 9 German destroyers or large torpedo boats and 15 submarines up to the first week in August, as well as the destruction of the cruiser *Koln* and another destroyer by coastal batteries in September. One of the destroyers and three of the submarines were sunk in the Black Sea. The loss of the *Koln*, if authentic, marked the end of Germany's three 6,000-ton cruisers of this class, since the *Karlsruhe* and *Konigsberg* were destroyed by the British during the invasion of Norway.

Great Britain. During 1941 the British Navy was increased by the commissioning of the 35,000-ton battleships *Prince of Wales* and *King George V*, the 23,000-ton aircraft carriers *Formidable* and *Illustrious*, and probably one or two other carriers of this type. The extent of construction work in the lesser categories is indicated by the statement that 480 naval vessels of all sizes would be completed by the spring of the year. To relieve English shipyards, a considerable share in the building of corvettes, sloops, motorcraft, and other auxiliaries was taken over by Canada, Australia, and other overseas parts of the Empire.

Material relief was also afforded by the opening of United States Navy Yard facilities for the refitting and repair of British naval vessels. The extent of this service is indicated by the fact that during August the carriers *Illustrious* and *Formidable* were at Norfolk, the battleship *Warspite* at Bremerton, the *Delphi* and *Dido* at the Brooklyn Navy Yard, the *Orion* and *Liverpool* at Mare Island, the submarine *Pandora* at Portsmouth, two corvettes at Charleston, and a mine-sweeper at Baltimore. A useful reinforcement in the anti-submarine campaign was afforded by the transfer to the Royal Navy of 10 U.S. Coast Guard cutters, well armed, seaworthy vessels of almost 2,000 tons.

Further material aid was given by the naval forces of Britain's continental allies. The Admiralty stated in September that 187 units from these

navies were serving with the British fleet. In the larger types these included 1 Dutch cruiser; 4 Dutch, 3 Free French, 6 Norwegian, and 6 Polish destroyers; 4 Dutch, 11 Free French, and 4 Norwegian sloops and corvettes. In some instances these were British or ex-United States ships turned over, especially to the Poles and Norwegians, to replace their own craft lost during or after the German conquest of their home lands.

The general account of the war at sea has largely covered British naval operations and losses, including the battle cruiser *Hood* in the Atlantic; the new battleship *Prince of Wales* and battle cruiser *Repulse* off Malaya; the carrier *Ark Royal*, the cruisers *Southampton*, *York*, *Gloucester*, *Fiji*, *Calcutta*, and *Galatea*, in the Mediterranean. The *Galatea* was hit by three torpedoes in a dawn submarine attack on December 16 off Alexandria. Only 119 of her 580 men were saved. The list of cruiser losses just given is incomplete, and there must be added also a steady, inevitable toll of British destroyers, submarines, corvettes, and other types sacrificed in Atlantic warfare and service in many fields.

Aggressive warfare against enemy-held coasts began in March with the raid on the Lofoten Isles of Norway, in which fish oil plants were demolished, 11 enemy vessels sunk, and 215 Germans captured. In another raid on the same coast in December naval and air forces and specially trained "commandos" cooperated with even greater success.

Greece. Following the occupation of Greece in April by German and Italian forces, about 15 war vessels escaped and entered into service with the British Mediterranean fleet. These included the 9,450-ton armored cruiser *Averoff*, 7 destroyers, 4 submarines, and 2 or 3 old torpedo boats. Vessels lost included the destroyers *Leon*, *Hydra*, *Psara*, and *Condouriotis*, the submarine *Proteus*, which was sunk earlier in the war by the Italians, and numerous torpedo boats and fleet auxiliaries.

Italy. Of all the major navies in the war, that of Italy has incurred the most serious damage, having suffered a loss of perhaps half of its combatant tonnage, with a corresponding decline in fighting spirit. Of the battleships, the 23,622-ton *Conti di Cavour* was wrecked in the British air attack on Taranto of November, 1940, and the *Duilio* and *Littorio* were so damaged as to require extensive repairs. If still afloat after the Battle of Cape Matapan in March, the 35,000-ton *Vittorio Veneto* must be so injured by torpedo hits as to be unfit for service for a long time to come. This leaves only two 23,622-ton battleships, since work on the 35,000-ton *Imperio* and *Roma* is understood to have been held up for lack of materials. These ships, scheduled for completion in 1942, belong to the *Littorio* class, which Italy has regarded as unequaled in any other navy. Of her seven heavy cruisers the 8-inch gun *Zara*, *Pola*, and *Fiume* were lost at Cape Matapan, and the *Gorizia* was sunk in the following July. On September 1 it was stated that Italy had lost 30 destroyers and 4 torpedo boats since the beginning of the war, and the figures were considerably augmented before the end of the year.

To counter these losses, the sinking of the British airplane carrier *Ark Royal* on November 14 was attributed to an Italian submarine lurking east of Gibraltar, and it was definitely stated that not aircraft but Italian *Mas* (motor torpedo) boats sank the British cruisers at Crete. On the other hand, Germany claimed the credit of the *Ark Royal* sinking for one of her own U-boats, and British

sources had evidence of an infiltration of German officers in the Italian navy as a means of bolstering morale.

Japan. In the absence of full and authentic data, the figures in the table on page 400 may be taken as representing the evidence available as to Japan's naval strength up to the outbreak of war, though in the latter part of the year there was doubtless a speed-up of new construction in all categories and conversion of merchant vessels into naval auxiliaries—six at least into aircraft carriers. The two new Japanese battleships *Nissin* and *Takamatu*, of about 40,000 tons, nine 6-inch guns, and 30 knots speed, are balanced by the new United States ships *North Carolina* and *Washington*, 3 knots slower but stronger in guns and armor. Six older Japanese battleships and 4 battle cruisers date from pre-Jutland days.

The air forces of the Japanese army and navy are estimated as between 3,000 and 4,000 planes of which from 1,500 to 2,000 belonged to the navy. The large carriers *Kaga* and *Akagi* have a capacity for 60 and 50 planes respectively, while three other carriers take 30 to 40 each, and two smaller ones accommodate only about 25. From one to four aircraft are also borne by battleships and cruisers, and the five plane tenders, though they have no flight deck, take a number of seaplanes along. With adequate supply of materials, the production of the 40 or more Japanese aircraft factories is put at 1,500 to 2,000 a year. As compared with 3,000 army fliers, the number of navy fliers (in the pre-war period) was about 2,100.

A variation in cruiser design for aircraft carrying appears in the *Tikuma* and *Tone*, recent 8,500-ton ships of the *Mogami* class, which devote the entire deck space from the mainmast aft to a flight deck accommodating from 9 to 15 seaplanes. The twelve 6.1-inch guns in the main batteries of these ships are grouped together in four triple turrets. In general Japanese cruisers have been criticized as over-gunned and weak in armor protection.

Of Japan's 55 or more long-range submarines, the largest boat of recent date is the *I-16* of 2,180 tons, with 20-knot surface speed, eight tubes, and one 5.5-inch gun. At the opposite extreme are the tiny two-man subsurface craft of which several were used in the attack on Pearl Harbor. The two captured were 41 feet long, 5 feet wide, and could make 24 knots, with a cruising radius at low speed of about 200 miles. Each carried two 18-inch torpedoes and a 300-lb. demolition charge. It is known that for several years Japan has conducted special experiments with "baby" submarines of this type.

Following the surprise raid on Hawaii, Japan's well defined air superiority in eastern waters insured her the immense initial advantage of naval control in that area, and made possible the transport of troops and successful landing operations in the Philippines, the Malay Peninsula, and elsewhere, as well as the subsequent maintenance of sea communications. The Japanese naval losses, however, were severe in the first month of warfare, and not easy to replace. They included the battleship *Haruna* of 29,330 tons, 1 light cruiser, 5 destroyers, 5 submarines, a gunboat, a mine sweeper, 10 transports, and 4 supply ships, besides numerous ships damaged but not sunk.

Netherlands. Intrepid Dutch seamen operating with the remains of their navy in home waters, in the Mediterranean, and in the Netherlands Indies, rendered effective service in each area of war. Of the 24 Dutch submarines, those operating in the Mediterranean from July to October sank two 8,000-ton tankers and several transports. On a

cruise in West Indies waters and elsewhere covering 60,000 miles, the training ship *Van Kinsbergen* captured 12 Axis or Axis-controlled merchant vessels aggregating 66,000 tons. One of these was the Vichy French liner *Winnipeg*, from Marseilles, which had on board 210 Germans, 76 Austrians, and 70 passengers of undefined nationality reported to be bound for Martinique.

The Netherlands Indies naval force, besides 5 cruisers and 6 to 8 destroyers, included at least 20 submarines, a strong flotilla of mine layers, and four classes of fast motor torpedo boats. The air force, with possibly 1,000 first line craft made up in part of Curtiss pursuit planes and long range Glenn Martin bombers, operated from the naval base at Surabaya and from numerous other air fields hidden among the 2,000 or more islands of the eastern empire. In the first month of the Pacific war these forces claimed the destruction of 15 Japanese airplanes, 2 cruisers, 2 destroyers, 9 transports, and 2 merchant ships, as well as definite damage to numerous other craft of these types.

Rumania. Two submarines, the S-1 and S-2, were launched at Galatz in May, and it was assumed that they would be completed before the end of the summer and manned by Germans for use against the Soviet Black Sea fleet. There were reports also that German submarines had been shipped down the Danube in parts for assembly at the Galatz yards.

Spain. At the close of the year it was reported that the Spanish Government had completed the reconstruction of several warships remaining from the civil war and had renewed work on the building of two 1,700 ton destroyers, the *Alava* and the *Liniars*, as well as three submarines. Two mine layers, the *Eolo* and *Triton*, of 1,700 tons, should also be in readiness for service. To supply the nation's oil needs, the government had at the beginning of 1941 a fleet of 12 tankers with a capacity for 83,000 tons, and three new units under construction.

Sweden. In September the Swedish navy suffered a serious disaster from an explosion and fire in the destroyer *Goteborg* which was communicated to the sister ships *Klas Horn* and *Klas Ugglä*. All three were destroyed and also a near-by magazine. Sweden still has 7 destroyers in commission and 2 building which were to be completed in the course of the year, as well as 10 torpedo boats, and 6 small submarines. In addition to the new destroyers mentioned, an extensive naval building program provides for two 8,000-ton coast defense battleships, with four powerful 10-inch guns in twin turrets fore and aft, and belt armor 10 inches thick amidships. These ships will have a speed of 33 knots and are expected to be in commission in 1942. The program provides further for construction of several submarines and 36 mine sweepers, the larger of which may be used also as mine layers. Six motor torpedo boats were purchased abroad in 1940, and are to be increased by eight more of home construction. A unique feature of the Swedish Navy is a fleet of five ice breakers built and building. All mount anti-aircraft guns, and the largest, the *Ymer* of 4,330 tons, has facilities for aircraft operations.

Turkey. The strength of the Turkish navy is centered in the battle cruiser *Yaruz* (Goeben) taken over from Germany in 1914. In addition Turkey has 13 submarines, 4 new mine layers, and a force of older cruisers, gunboats, and auxiliary craft. Four destroyers and four submarines were completed in England and awaiting delivery.

Thailand. Early in the year, in an engagement at Kochang with the French cruiser *Lamotte-Picquet*,

a Thailand squadron suffered a defeat in which two Thai torpedo boats were sunk and the coast defense ship *Dhon-Buri* was driven ashore. Thailand has a considerable number of naval vessels of similar type which presumably fell under Japanese control in December.

Union of Soviet Socialist Republics (Russia). Although information regarding the Soviet Navy has been restricted by strict censorship, some additional data have appeared following Russia's accession to the ranks of the anti-Axis powers. The battleship strength is limited to three old vessels, reconstructed to some extent in the period from 1926 to 1931. Of two 35,000-ton battleships planned, one, the *Trettni International*, was laid down in 1939, but since most of the materials for her construction had to be imported from abroad, it seems unlikely that much progress has been made toward her completion. She was to have a speed of 30 knots and an armament of nine 16-inch guns. The *Stalin*, laid down originally as a cruiser, was long afterward converted into an aircraft carrier and completed in 1939.

Cruisers include 3 modern ships of the *Kirov* type completed between 1937 and 1940 and 4 older ones of pre-World War I design. About half of these were in the Black Sea, together with a considerable force of destroyers, against which Germany and her Rumanian ally could oppose only torpedo craft and a limited number of small U-boats. For harassing German transports in the Baltic and for defending the approaches to Leningrad, the Soviet navy could doubtless put to practical service a considerable part of its total strength of 51 destroyers, 50 motor torpedo boats, and 160 submarines. Of the latter 72 were reported in the Baltic and about 30 in the Black Sea.

In view of the large scale employment of Baltic Sea communications by the Germans in their Russian campaign, the operation of even a small part of these forces, along with mines, aircraft, and shore batteries, would add credibility to the Soviet claims of 10 or more Nazi destroyers and 15 submarines sunk during the late summer, together with a still larger toll of transports and supply ships. The Nazi advance on Leningrad and capture of islands and outer bases put a limit to these operations and made possible also the destruction of several naval vessels still on the stocks at Tallinn (Reval) and other bases. It was later reported that numerous Soviet light units and submarines had been moved through the White Sea Canal to the Arctic.

In the Far East the naval strength at Vladivostok was estimated to include between 60 and 70 submarines and 50 fast M.T.B.'s, a force which might effectively support Soviet air power in either offensive or defensive warfare against Japan. Under the second Soviet five-year plan 18 air bases were completed in the Far Eastern area, and 22 more were to be finished by 1942. Despite energetic pre-war construction, however, the Soviet navy remains in itself a limited weapon, weakened by its dispersion over four remote sea frontiers.

United States. Some idea of the numbers and combatant types to compose the immense "two-ocean navy," the legislative action for which was recorded in the 1940 YEAR BOOK, is given in the preceding table. Immediate interest centers in the ships completed or nearing completion within the year. The loss of the *Arizona* and *Oklahoma* (captured but not beyond salvage) at Pearl Harbor was more than compensated by the commissioning in the preceding spring of the new 35,000-ton battleships *North Carolina* and *Washington*, and by the

assurance that four others of the same class will be completed within the coming year. These *North Carolinas* are 750 feet in length, of 108-foot beam, and 33-foot maximum draft. They carry nine 16-inch guns in 2 triple turrets forward and 1 aft, a secondary armament of 20 five-inch dual purpose guns, and numerous 1.1-inch pompoms and .50-caliber machine guns for anti-aircraft defense. With a specified speed of 27 knots, they can do at least two knots better, and saving in machinery weights has permitted much heavier deck and side armor.

During the year the 20,000-ton *Hornet* was added to the force of aircraft carriers. A dozen destroyers, including five of an improved *Benson* (or *Bristol*) type, were commissioned in 1941, and about 60 more, of this 1,700-ton class and larger, are to be ready by the end of 1942. Seven light cruisers are due for completion in 1942. Counting the ships already noted, and 9 new submarines, the record of naval construction for the year up to Sept. 1, 1941, was 213 ships completed, 249 launched, and 436 with keels laid. The greater part of these were, of course, mine sweepers, submarine chasers, and other small patrol and district auxiliaries. An additional appropriation of \$300,000,000 in November provided for the construction or conversion of 400 light-draft vessels to be used for patrol in harbors and outlying bases. These, with 205 similar craft to be supplied for the Coast Guard, will release destroyers for other duties. By September the Navy had also converted 193 merchant ships for war use as hospital ships, tankers, and supply vessels, and had 81 more under conversion. The new naval vessels are under construction in 11 government yards and 110 private plants—44 on the Atlantic, 32 on the Pacific, 10 on the Gulf, and 24 on the Great Lakes.

Looking farther into the future, the 17 new battleships will include, in addition to the *North Carolinas*, 6 powerful 45,000-ton ships of the *Iowa* class, and 5 giant *Montanas* ranging in the neighborhood of 60,000 tons. For passage through the Panama Canal, these last ships will require the third set of locks, 140 feet wide, now under construction. Provision has also been made for six "super-cruisers," of the size and details of which little has been revealed. Adoption of a 48-hour week and 3-shift, 24-hour day in construction work has made possible an estimated 12.5 per cent gain in construction time, with a prospect that the two-ocean fleet may be ready in 1944.

For the enlarged fleet the enlisted strength of the navy had increased by the end of November to a total of 289,382, of which 229,460 were regulars, 3,325 were retired men on active duty, and 63,286 were from various classes of reserves. Commissioned officer personnel totaled 32,396, of which 9,762 were regulars, 1,410 retired, and 21,224 reserves. New legislation at the beginning of 1942 provided for an increase of the regular enlisted strength to 500,000, of which at least 300,000 would be needed within the twelve-month. To this may be added the 20,000 officers and men in the Coast Guard, which late in October was placed under naval control. To meet the increased need for officers, appointments to the Naval Academy were increased, the Academy course was telescoped to three years, universities with naval reserve officer training courses were increased to 27 with provision for 7,200 students, and the system of special training courses for selected graduates of colleges and technical schools was further expanded.

In the training of personnel for the naval air arm it was hoped to increase the number of air pilots

from 3,639 at the beginning of the year to more than 6,000 at the end. This could be in part accomplished by expansion of the training centers at Miami, Jacksonville, and Corpus Christi, Texas, to full capacity (inclusive) of 800 entrants, and by graduation of about 70 per cent in a period which might ultimately be shortened to seven months. At the end of the year the number of pilots was given as 6,900, and naval planes had increased from 2,500 to about 5,000 (3,926 on June 30)—still far from the 15,000 planes and 17,000 pilots ultimately called for.

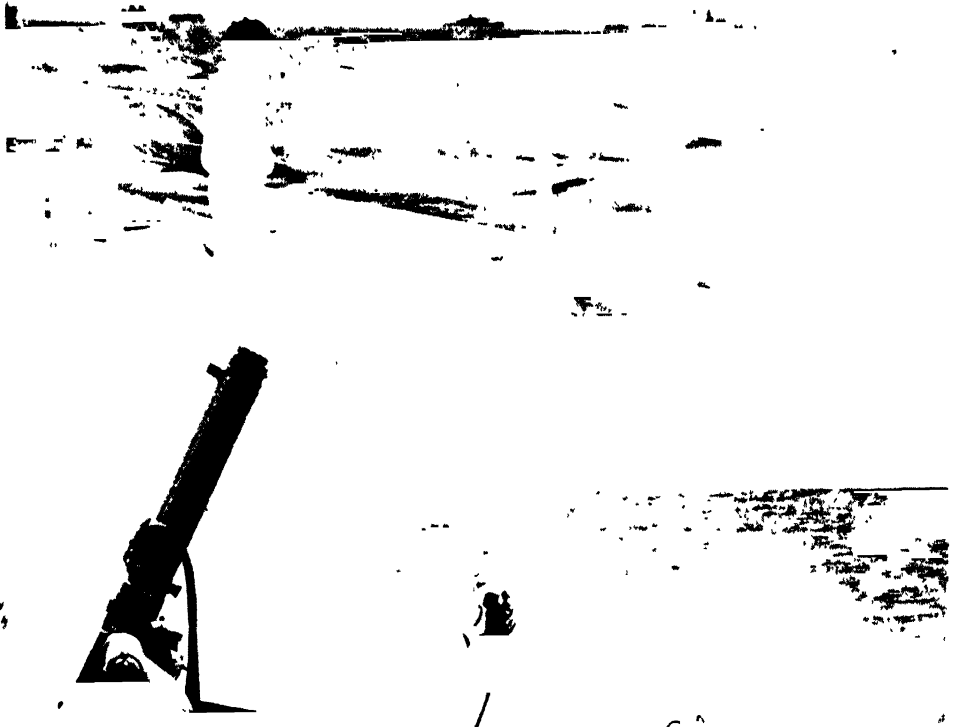
The organization of the forces afloat was modified on February 1 by raising the Atlantic Patrol Force, established Nov. 1, 1940, to the status of a separate fleet. At first composed of about 125 units, including the three old second-line battleships *New York*, *Arkansas*, and *Texas*, this force has been further expanded to meet the exigencies of Atlantic warfare. While limited in the early months to patrol, it received orders from September 16 to protect American commerce by attacking German or Italian submarines engaged in piratical destruction of shipping. In these operations the first naval casualties were the destroyers *Greer* and *Kearny* severely damaged by submarine torpedo attack on September 4 and October 18 respectively, and the older destroyer *Reuben James*, sunk on the night of October 30-31 with a loss of 121 men. The Pacific Fleet, consisting of 12 battleships, 4 aircraft carriers, and the bulk of the heavy and light cruisers, contained the main fighting strength of the navy. The Asiatic Fleet up to the outbreak of war numbered about 35 cruisers, destroyers, and submarines, with a relatively small force of patrol planes.

The Atlantic bases at Bermuda and at Placentia Bay, Newfoundland, were formally commissioned in July, and work on these and other new bases was pushed forward. Guantánamo and San Juan, Puerto Rico, have been expanded to serve as bases for all fleet forces, and Vieques, an island east of Puerto Rico, is to have a graving dock and protected fleet anchorage. In addition to the facilities acquired at Jamaica, seaplane bases are under development in the Bahamas, Antigua, St. Lucia, Trinidad, and on the Essequibo River in British Guiana, facilitating aircraft patrol of the Caribbean.

Yugoslavia. On her entry into the war against the Axis Yugoslavia had 4 modern destroyers, 4 submarines, 10 motor torpedo boats of which eight dated from 1937, and a very considerable force of mine layers and sweepers, and other auxiliaries. Most of these were later scuttled by their crews or seized by the invaders, but a destroyer, a submarine, and two M.T.B.'s joined the British fleet in the Mediterranean.

Venezuela. Arrangements were made this year for the sending of a United States Naval Mission to Venezuela, similar to the naval and army missions which have for some time been established in Brazil, Peru, and other Latin American nations. The mission will consist of four officers and two petty officers, headed by a lieutenant commander. Contributory also to coordinated American defense preparations is the development of Venezuela's Puerto Cabello naval base by provision for increased port facilities and for a floating dry dock accommodating ships up to 6,000 tons. See AERONAUTICS, PETROLEUM; PRODUCTION MANAGEMENT, OFFICE OF; UNITED STATES under *Foreign Affairs*; WORLD WAR. For appropriations see UNITED STATES under *Legislation*. Compare MILITARY PROGRESS; SHIPBUILDING.

ALLAN WESTCOTT.



Official U S Navy Photos

CONVOY DUTY

A United States bluejacket on guard as lend-lease ships are convoyed across the Atlantic.

Wearing tin hats, the anti-aircraft gun crew is constantly on the alert against air attacks



JAPANESE MIDGET SUBMARINE

One of the two-man submarines used in the attack on Pearl Harbor, December 7. Launched from a larger vessel, it has a range of about 200 miles and a speed of 24 knots. It is 41 feet long, has five compartments (two occupied by the electric batteries which propel it) and carries two 18-inch torpedoes and a demolition charge under the stern with which it may be self-destructed.

REVOLT GROWS IN SERBIA Labor to Ask Murphy Ouster

VOLUME ONE:
NUMBER ONE.

Of the new morning newspaper launched by Marshall Field in Chicago on the fourth of December. See **NEWSPAPERS AND MAGAZINES**

Anti-Strike Bill Passed By House

House's 'Wheat Storer' An Administration Measure Passed 228-128 Today



Federation Will Urge Green to Act

Standard Will Call Executive Board To Order Program

Air Raid Met Will Guard Chicago

Plan for 40,000 Volunteers to Patrol Region Reported

Hitler Forced To Put Army On '3d Front'

Roads Reach Taganrog, Axis Holds Edge in Libya

Prices Zoom At Stock Show

Shareholders Sell for \$4,000, 20-Year High

Exports Hunt for Hundreds of Radium

Washington Weighs New Balance Policy

Kelly Booms City as '2d Capital'

Washington Weighs New Balance Policy

Spring Dollar A Bigger Chance

Forecasters See Rise in Value

Girl Kills Brother To End His Misery

She Was in a State of Mind

Glasses Seen to Be a Must For Well-Dressed Student

Faculty Members Say

See Ray of Hope in Pacific Crisis

Experts Show Where War May Turn

Weather Men for Today

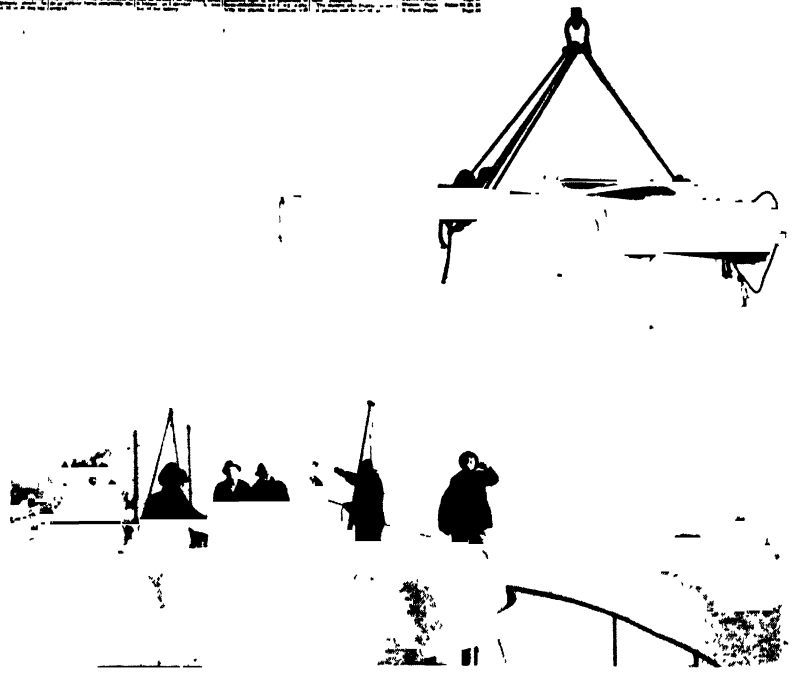
Sunshine and 68 Degrees

How Leonard, Paul, Herman, Will Fight

Boxing Match

Where to Find It

Advertisement



International News Photo

GUNS FOR U.S. MERCHANTMEN
After Congress amended the Neutrality Act.
See **NEUTRALITY; UNITED STATES.**

NAVIGATION. See COAST GUARD, U.S.; NAVAL PROGRESS; SHIPPING; WATERWAYS, INLAND.

NAVY, U.S. See NAVAL PROGRESS; WORLD WAR; separate article on COAST GUARD. The Secretary of the Department of the Navy in 1941 was Frank Knox.

NAZARENE, Church of the. A church organized in Los Angeles, Calif., in 1895. With it were subsequently united the Association of Pentecostal Churches in America (founded in 1895), the Holiness Church of Christ, and the Pentecostal Mission. Headquarters, 2923 Troost Avenue, Kansas City, Mo. For statistics, see RELIGIOUS ORGANIZATIONS.

NAZISM. See FASCISM.

NDMB. See NATIONAL DEFENSE MEDIATION BOARD.

NEBRASKA. A west north central State. Area: 77,237 sq. mi., including 584 sq. mi. of inland water. Population: (1940 census) 1,315,834. The urban population comprises 39.1 per cent of the total (U.S. average, 56.5 per cent); non-white population, 1.4 per cent (U.S. average, 10.2); elderly (65 years and over), 8.1 per cent. Nebraska ranks 15th among the States in area, 32d in population, and 37th in density, with an average of 17.2 persons per square mile. The capital is Lincoln with 81,984 inhabitants, largest city, Omaha, 223,844. There are 93 counties and nine cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS

Education. According to C. W. Taylor, Superintendent of Public Instruction, there were 276,188 pupils enrolled in the public schools of Nebraska during the school year 1940-41, 191,910 in elementary schools and 84,278 in secondary schools. Teachers numbered 13,760 with the men teachers in city and village schools receiving an annual average salary of \$1,123, women \$981; rural schools, men \$517 and women \$498. Total expenditures for the year were \$20,427,683.88.

Transportation. State highway mileage in 1939, including streets under State control, totaled 8,879, of which 8,513 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 417,827; 347,317 were private and commercial automobiles, 310 busses, and 64,489 trucks and tractor trucks. Gross motor-fuel consumption was 244,354,000 gallons. Net motor-fuel tax receipts were \$11,901,000, the rate being five cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$2,839,000.

Railways of all classes extended 6,092 miles (Dec. 31, 1939), 2.59 per cent of the total mileage in the United States. Class I steam railways (5,741 miles) reported 5,734,542 tons of revenue freight originating in Nebraska in 1940 and 7,911,308 tons terminating in Nebraska. There are 46 airports and landing fields in the State (13 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 202 civil aircraft in the State and 1,111 commercial and private pilots (988 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 18,620,000, as compared with 17,313,000 acres in 1940. According to the latest census, there are 121,062 farms, valued at \$1,137,808,019, averaging 391.1 acres each. Farm population numbered 498,756 or 37.9 per cent of the total. Leading crops with production in 1941 were: Corn, \$105,817,000, 157,638,000 bu.; wheat, \$35,108,-

000, 36,194,000 bu.; barley, \$19,044,000, 48,832,000 bu.; hay, \$18,729,000, 3,785,000 tons; oats, \$17,912,000, 54,280,000 bu.; sweet sorghums, \$6,735,000, 2,245,000 tons; potatoes, \$5,291,000, 9,620,000 bu.

Manufacturing. According to the 1939 Census of Manufactures, there were 1,161 manufacturing establishments in Nebraska, employing 18,810 wage earners who received \$20,623,550 in wages for the year. The total value of products was \$273,524,581; value added by manufacture, \$69,087,373.

Mineral Production. The value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$4,390,291 or only one-tenth per cent of the total for the United States.

Trade. According to the 1940 census there were 3,391 wholesale establishments in Nebraska, employing 15,038 persons, reporting net sales for 1939 of \$566,975,000 and annual pay roll of \$20,723,000. There were 19,330 retail stores with 44,353 employees, reporting sales of \$397,196,000 and pay roll of \$36,221,000. Service establishments numbered 7,619, employing 8,511 persons for \$6,715,000 per year, and reporting a business volume amounting to \$26,372,000. The leading business center of the State is Omaha which reported wholesale sales of \$390,754,000 and retail sales of \$105,453,000. Douglas County, including Omaha City, is the leading county in the volume of receipts from its service establishments (\$10,594,000). Lincoln reported sales of \$33,314,000 wholesale and \$39,142,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Nebraska was \$30,816,000. Under the Social Security program, financed by Federal funds matching State grants, 29,024 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$17.11 (U.S. average pension, \$21.08); 13,077 dependent children in 5,852 families received average monthly payments of \$27.57 per family (U.S. average, \$32.73). In addition, in 70 counties payments amounting to \$12,759 were made from local funds without Federal participation to 746 families in behalf of 1,705 children under the State mothers'-pension law. There were 718 blind persons receiving \$20.93 per month, figures include aid administered with Federal participation (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only numbered 5,763 and received \$10.51 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses). CCC, 1,883 (\$125,000); NYA student work program, 5,369 (\$36,000); NYA out-of-school work program, 4,385 (\$90,000); WPA, 20,176 (\$1,152,000); other Federal emergency projects, 451 (\$46,000); regular Federal construction projects, 3,579 (\$395,000). The Farm Security Administration certified subsistence payments totaling \$23,000 for the month to 1,239 cases.

Legislation. Nebraska has the only unicameral legislature among the States, composed of 43 Legislators chosen by non-political election. It convenes in regular session on the first Tuesday of January in odd years.

In the 55th session of the Nebraska Unicameral Legislature 515 bills were introduced and 195 new laws were passed. Appropriations voted in regular session for the biennium 1941-43 totaled \$57,972,879 (excluding \$1,170,261 of special insane funds), as compared with \$53,111,277 for the preceding

biennium. The increase of nearly \$5,000,000 was voted by a predominantly Republican legislature which had been elected on an economy program. The following summary of bills passed that were "controversial or of more than ordinary interest" has been condensed from comment in *The Nebraska Taxpayer*, issue of May-June, 1941.

L. B. 8 abolishes the State Planning Board. In introducing this bill Senator Tom Lambert is quoted as saying, "Since 1935 the Planning Board spent \$55,000 in state money, and surveys made under its direction with WPA help have involved a total expenditure of \$455,710 . . ."

L. B. 12 proposed to abolish the State Sheriff's office. It wound up by consolidating that office and the Highway Patrol. The expense of the Sheriff's office was formerly taken from property tax and is now paid from drivers' license fees. The bill provides for use of members of the patrol for general law enforcement.

L. B. 65, corrupt practices act, puts teeth in the act relating to filing campaign expense accounts by candidates for public office.

L. B. 65 provides that receipts for the inheritance tax be turned over to the counties. They can be spent for relief, roads and bridges, or in the general fund.

L. B. 128 requires that all fees collected by county officials shall be reported monthly instead of quarterly as provided under the old law.

L. B. 180 provides for the cancelling of delinquent interest on all taxes prior to March 8, 1939. It was passed over the veto of Governor Griswold.

L. B. 148 provides a trade school at Milford. The legislature appropriated \$32,000 as an emergency appropriation for immediate use and then appropriated an additional \$50,000 for the biennium.

L. B. 153 repeals the state hail insurance law.

L. B. 156 permits the state to go back three years instead of one and collect unreported personal or intangible taxes.

L. B. 191 resubmits the home rule amendment to be voted on in the regular election in 1942. The legislature seemed to feel that the people were not given proper information on this issue in the last election. Because of a hot presidential campaign, State affairs were somewhat neglected.

L. B. 192 reduces the mileage on State autos from five cents per mile to four cents per mile.

L. B. 221 empowers the Board of Control and county boards to cooperate with the Federal government in creating a surplus commodities stamp plan in all the counties. The legislature appropriated \$400,000 out of the state general fund, (supported by general property tax) to be loaned to the counties to start the plan. The counties will issue warrants, not included in their budget, to repay the state and in turn will be reimbursed by selling the stamps. L. B. 234 provides for the distribution of surplus commodities by the stamp plan.

L. B. 250, New State Corporation Law, is explained by its proponents as a clarification of corporation laws and is copied somewhat after the laws of Delaware. Present corporations will not be affected.

L. B. 282 regulating small loans in Nebraska and placing their supervision under the Department of Banking, was a very controversial piece of legislation. Senator Peterson said "I vote for L. B. 282 not because I approve of it but solely because it improves the present law."

L. B. 429 is a compact between the states of Colorado, Kansas, and Nebraska on the water of the Republican River.

L. B. 507 redistricts the congressional districts of the state of Nebraska.

L. B. 462 provides for investigation and promotion by the University of new uses for agricultural products through chemistry.

L. B. 470 provides exemption from the tax on gasoline used for agricultural purposes. This is legislation that farmers, under the leadership of the Farm Bureau Federation, The Farmers Union, and the Grange, have been working for in several sessions of the legislature. It provides that farmers, who have secured a license as a farm operator, may receive a refund of four cents tax on gasoline used for agricultural purposes.

L. B. 399. This "must" legislation came from Washington and provides that the names of all recipients of any form of so-called assistance must be held as a state secret and likewise, of course, the amount that the individuals received. The idea was repulsive to the legislature as a whole. An amendment was finally attached to the bill which stated: "All state and county officials of this state shall have free access at all times to all records and information." However, to make this information public the official would be subject to a fine or jail sentence.

Finances. A partial report on total tax collections in Nebraska for the fiscal year ending in June, 1941, showed \$28,495,000 (complete report for 1940:

\$28,609,000). Total sales taxes amounted to \$13,733,000, including motor fuel, \$11,973,000. Taxes on specific businesses ran to \$1,799,000, general and selective property, \$5,046,000, unemployment compensation, \$2,212,000.

Cost payments for the operation of general government totaled \$22,487,000 in 1939, the latest year available. (Revenues for the general government for that year were \$34,367,000.) Cost of operation per capita was \$17.01. Total gross debt outstanding was \$998,000, as compared with \$929,000 in 1932.

Officers and Judiciary. The Governor is Dwight Palmer Griswold (Rep.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, William E. Johnson; Secretary of State, Frank Marsh; Attorney General, Walter R. Johnson; State Treasurer, L. B. Johnson, State Auditor, Ray C. Johnson. Chief Justice of the Nebraska Supreme Court is Robert G. Simmons; there are six associate members elected by popular vote for six-year terms. See CONSUMERS' COOPERATIVES; PLANNING.

NECROLOGY. The following is a list of notable persons who died during the year 1941.

Adams, Alva Blanchard. American Senator (Dem.) from Colorado, died in Washington, D.C., Dec. 1, 1941; born in Del Norte, Colo., Oct. 29, 1875. Graduated from Yale University in 1896 and from the Columbia Law School in 1899, he had been a member of the U.S. Senate since November, 1923. Senator Adams was one of the Senate's leaders in the effort to reduce government expenses.

Adams, Joseph Henry. American inventor and author; died in Brooklyn, N.Y., Feb. 10, 1941; born in Brooklyn, 1867. Inventor of the Adams cracking process in the distillation of oil, used by the leading gasoline companies. He was also the author of several books for boys: *Harper's Outdoor Book for Boys*, *Harper's Indoor Book for Boys*, *Harper's Machinery Book for Boys*, and *Harper's Electricity Book for Boys*; all written between 1900 and 1910.

Aked, Charles Frederic. American minister; died in Los Angeles, Calif., Aug. 12, 1941, born in Nottingham, Eng., Aug. 27, 1864. Ordained a Baptist minister in 1886, he held several pastorates in England (1886-90); pastor, Pembroke Chapel at Liverpool (1890-1907); Fifth Avenue Baptist Church, New York (1907-11); First Congregational Church at San Francisco (1911-15), at Kansas City, Missouri (1919-24); and pastor and founder of All Souls Church, Los Angeles, since 1925. As an author he published, among others *The Courage of the Coward* (1905), *Wells and Palm Trees* (1908), *Old Events and Modern Meanings* (1908), and *The Lord's Prayer* (1910).

Albertini, Luigi. Italian politician and fascist foe; died in Rome, Italy, Dec. 30, 1941; born in Ancona, Italy, Oct. 19, 1871. Assuming a leading role in Italian politics during the first quarter of this century, he became director of the *Corriere Della Sera* of Milan in 1900, and as such used the newspaper as an organ to voice approval of Italy's entry into World War I on the side of the Allies. In recognition of his services in that connection the King appointed him Senator of the Kingdom in 1914. When Mussolini came to power the most outspoken opposition, during 1921-25, came from Albertini. Albertini explained his hatred of fascism with the words "I cannot reconcile the subordination of the individual to an undemocratic system."

Aldrich, Richard S. American Republican Congressman from Rhode Island (1923-33); died in Providence, R.I., Dec. 25, 1941; born in Washington, D.C., Feb. 29, 1884. He was appointed to the Foreign Affairs Committee in his first term and to

the Ways and Means Committee in his second—appointments usually reserved for veteran members.

Alexander, Robert. American major general; died in New York, N.Y., Aug. 26, 1941; born in Baltimore, Md., Oct. 17, 1863. In the army since 1886, he was a veteran of Indian campaigns, the Spanish-American War, the Cuban occupation, the Philippine insurrection, and the Mexican campaign of 1916. During the World War he became commander of the 77th Division, New York, in France. General Alexander was appointed a regular brigadier general in 1921 and a major general in 1927. He retired in 1927. His only publication was *Memories of the World War* (1931).

Alfonso XIII; Spanish King; died in Rome, Italy, Feb. 28, 1941; born in Madrid, Spain, May 17, 1886. The last occupant of the Bourbon throne, he reigned nearly forty-five years, until Apr. 14, 1931, when he was forced into exile by the overwhelming vote of the anti-monarchist parties.

In 1906 the King married Princess Victoria Eugenie Ena of Battenburg, a granddaughter of Queen Victoria of England. Alfonso's reign, like his exile, was one frequently marked by tragedy. Eight separate attempts were made upon his life. He managed to keep Spain out of the World War, but the Moroccan debacle of 1921 proved to be his nemesis. In this affair twenty thousand Spanish soldiers were trapped and more than half were killed. Alfonso, through General de Rivera as dictator, immediately dissolved the Parliament and placed the country under martial order. Seven years of this was enough to bring public opinion to revolt, and the King lost his throne. In exile, he lived with the hope that he might soon return to the throne, but the outbreak of the civil war put an end to any such plans. The courage and bravery of Alfonso demands notice, for hardly a month passed in the early years of his reign in which he did not give proof of this.

Anderson, Sherwood. American author; died in Colon, Panama, Mar. 8, 1941; born in Camden, O., Sept. 13, 1876. At the conclusion of the Spanish-American War, in which he had served, he became the manager of a prosperous paint factory, but abruptly resigned at the age of forty and turned, in contentment, to creative writing. By 1925 he had been acclaimed, along with Dreiser, Lewis, O'Neill, and others, as the harbinger of a new day in American literature. Out of the money from his writings, he purchased two country newspapers in Marion, Virginia, in order "to get back to the people," as he put it, and edited these up to the time of his death. His novels, plays, and short stories fill some 15 volumes; included among his better known works are *Winesburg, Ohio* (1919), *Poor White* (1920), *The Triumph of the Egg* (1921), *Many Marriages* (1922), *A Story Teller's Story*, a philosophical autobiography (1924), *Dark Laughter* (1925), and *Kit Brandon* (1936).

Armington, Frank Milton. Canadian-American artist; died in New York, N.Y., Sept. 21, 1941; born in Fordwich, Ontario, Canada, July 28, 1876. A painter and etcher, his works hang in American, French, and British galleries.

Arsonval, (Jacques) Arsène d'. French physicist, whose researches led to his discovery of the high-frequency currents and diathermy; died in Limoges, France, Dec. 31, 1941; born at La Porcherie, Haute-Vienne, France, June 8, 1851.

Atkinson, Fred W(ashington). American educator, president of Brooklyn Polytechnic Institute, New York, from 1905 to 1925; died in Tucson, Ariz., Oct. 21, 1941; born in Reading, Mass., May 23,

1865. He was superintendent of education in the Philippine Islands from 1900 to 1903.

Austin, Frederick Britten. British author and playwright, who contributed extensively to American magazines; died in Somersetshire, England, Mar. 12, 1941; born, May 8, 1885. Living his literary life in a contemplation of war, past, present, and future, he was noted for his amazingly accurate military writings and predictions. His books included *In Action* (1913), *Battlewreck* (1917), *On the Borderland* (1922), *The War-God Walks Again* (1926), *A Saga of the Sword* (1928), *The Red Flag* (1932), *Told in the Market Place* (1935), and the play *The Thing That Matters* (1921).

Austin, 1st Baron, Longbridge, Herbert. British industrialist; died in Bromsgrove, Worcestershire, Eng., May 23, 1941; born in Little Missenden, Buckinghamshire, Eng., Nov. 8, 1866. Known as the "Henry Ford" of England, Lord Austin was principally noted for his manufacturing of the Baby Austin, the car which weighed only 1,130 pounds. One of his greatest business rivals said of him: "No man has done more for the motor industry." He was knighted in 1917, raised to the peerage in 1935; and was a Conservative Member of Parliament from 1919 to 1924.

Baca-Flor, Carlos. Peruvian painter; died near Paris, early in 1941; born at Islay, Dept. of Arequipa, Peru, 1869. Known as the "Painter of Millionaires" after he had completed a series of portraits of J. P. Morgan and other financiers, he had studied painting and sculpture at the National Institute and the Academy of Fine Arts at Santiago, Chile, and in 1889 received a fellowship to study in Europe from the government of Peru. He studied under Filippo Prosperi at the Royal Institute of Fine Arts of Rome (1891) and under Jean Paul Laurens and Benjamin Constant at the Academy of Paris (1894-95). He was named American corresponding member to the Institut de France in 1926. Other of his works are in England, France, Italy, and Spain.

Baden-Powell, Lord Robert S. British general and founder of the Boy Scouts; died at Nyeri, Kenya, Africa, Jan. 8, 1941, born in London, Eng., Feb. 22, 1857. He emerged from the Boer War as a popular hero due to his defense of Mafeking, and with the rank of major general. As Lieut. Gen. Sir Robert Baden-Powell, he retired from the army in 1910. From this time on he devoted himself to the Boy Scout movement, which he had founded two years previously. The Scout movement took hold at once; and during the more than a quarter of a century he was Chief Scout of the World it enlarged until millions of boys from all nations belonged to it; also, more than a million Girl Guides, Girl Scouts, and Campfire Girls joined together under his banner. The greatest honor conferred upon him, perhaps, was in 1930, during the World Scout Jamboree, when 50,000 high ranking Scouts from seventy-one countries gathered to pay him homage. Among his many publications were: *Aids to Scouting* (1899), *Scouting for Boys* (1908), *My Adventures as a Spy* (1915), *Pigsticking* (revised edition) (1924), *Scouting and Youth Movements* (1929), *Lessons of a Lifetime* (1933), his autobiography.

Baer, William Jacob. American painter; died in East Orange, N.J., Sept. 21, 1941; born in Cincinnati, O., Jan. 29, 1860. A founder of the American Society of Miniature Painters (1899) and an international leader in the modern school of miniature painting, his most famous works include *The Golden Hour*, *Aurora*, *Daphne*, *In Arcadia*, *Madonna With the Auburn Hair*, *Summer*, *Nymph*, and *Primavera*.

Baez, Cecilio. Paraguayan lawyer, professor, and diplomat, President of Paraguay (1908); Minister to the United States in 1917; died in Asuncion, Paraguay, June 18, 1941; born in Asuncion, in 1862.

Bailey, J(ames) R(obinson). American organic chemist and educator; died in Austin, Texas, Mar. 25, 1941; born in Houston, Tex., 1868. A graduate of the University of Texas (1891), he became notable during the World War for his reproduction of secret German formulas for novocain and synthetic adrenalin. After 1891 he was associated with the University of Texas as research chemist on petroleum bases, and as professor of organic chemistry since 1901. His published works, running into the scores, have been largely on nitrogen compounds in petroleum and cottonseed-meal, and include the discovery of over 20 drugs of varying nature.

Baizan, Celestino. Cuban politician, Governor of Havana Province (1933); one of the founders of the Nationalist party; died near Guradamenelan, Cuba, June 13, 1941; born in Spain, 1873.

Baker, Arthur Mulford. American clergyman and editor; died in Philadelphia, Penn., Sept. 22, 1941; born in Wapakoneta, O., Oct. 11, 1880. Chaplain of the 120th Infantry of the A.E.F. in the World War, he was assistant editor of the American Sunday School Union Publications (1924-30) and editor since 1930. His publications include *If I Were a Christian* (1930), *Hoofbeats in the Wilderness* (1930), and *The River of God* (1930).

Baker, Charles Whiting. American civil engineer, died in Montclair, N.J., June 5, 1941; born in Johnson, Vt., Jan. 17, 1865. He was editor of *The Engineering News* from 1895 to 1917, and author of *Monopolies and the People* (1889), and *Pathways Back to Prosperity*.

Balfour, George. British electricity magnate, died in London, Eng., Sept. 26, 1941, born in Portsmouth, Eng., 1872. An electrical and mechanical engineer and one of the founders of Britain's electrical industry (he was known as the "electricity king"), he was a Conservative Member of Parliament from Hampstead since 1918. He was founder and president of Balfour, Beatty & Co., London.

Banting, Sir Frederick Grant. Canadian scientist, co-discoverer of insulin; died in an airplane crash in Newfoundland while en route on a secret war mission to Great Britain, Feb. 21, 1941; born in Alliston, Ont., Nov. 4, 1891. In 1921 Dr. Banting began work to find something that would alleviate the ravages of diabetes. By the following year he had discovered that insulin could be extracted from the pancreas and that injections of the substance would check diabetes. The discovery brought relief to thousands throughout the world, and in 1923 he received the Nobel Prize for his work.

Barclay, Sir Thomas. British lawyer and peace advocate; died in occupied zone of France, funeral services were held on Jan. 20, 1941; born in Dunfermline, Eng., 1853. He founded the Franco-Scottish Society (1895); the International Brotherhood Alliance (1905), and thereafter advocated the preservation of relations between France and England and, until the second World War, improvement of Anglo-German relations. He was a member of Parliament (1910); president of the British Chamber of Commerce in Paris (1899-1900); and vice president of the International Law Association at his death. His publications included *Problems of International Practice and Diplomacy* (1907), *International Law and Practice* (1917), *Law and Usage of War* (1914), *New Methods for Adjustment of International Disputes* (1918), and *Collapse and Reconstruction* (1919).

Barringer, Paul Brandon. American educator, chairman of the faculty at the University of Virginia during 1895-1903 and president of Virginia Polytechnic Institute from 1907 to 1912; died in Charlottesville, Va., Jan. 9, 1941; born in Concord, N.C., Feb. 13, 1857.

Bartel, Kazimierz. Polish scientist and politician; reported shot by German Gestapo in Lwow, Poland, during the outbreak of the German-Russian war, exact date unknown, born in Poland, 1882. He served as Chief Military Administrator of Railways (1919), Minister of Railways (1919, 1920-21), member of the Diet for Radical Peasant Party and for the Government Bloc (1922-29), Prime Minister of Poland (1926, 1927-28), and Vice Prime Minister (1926-27). At his death he was reported to be a professor of mathematics at Lwow University and Technical College.

Bartet, Jeanne Julia (Regnault). French actress, starred in classic roles for forty years (1872-1919) at the Comédie Française, died in Paris, France, 1941, born in Paris, Oct. 28, 1854. Known, before Sarah Bernhardt, as "The Divine," she played the leading roles in plays by Racine, Molière, Musset, Victor Hugo, Dumas, Lavedan, Hervieu, Capus, and Brieux.

Bates, Blanche. American actress; died in San Francisco, Calif., Dec. 25, 1941, born in Portland, Ore., 1873. For thirty years (1894-1926) she was a leading star of the American stage, attaining outstanding success in the hits *Madame Butterfly*, *Under Two Flags*, *The Darling of the Gods*, and *The Girl of the Golden West*. Other productions she appeared in were *The Fighting Hope* (1908), *Nobody's Widow* (1910), *The Witness for the Defense* (1913), *Half-an-Hour* (1914), and *Mrs Partridge Presents* (1926). She was the wife of George Creel, head of the Committee on Public Information in World War I.

Beard, Daniel Carter ("Dan Beard"). American Boy Scout pioneer, died in Suffern, N.Y., June 11, 1941, born in Cincinnati, O., June 21, 1850. One of the founders of the Boy Scouts of America, he had been National Scout Commissioner since the founding in 1910. His life-long interest in outdoor activities for boys, his desire to teach the Scouts the spirit of America, his publications, all contributed to make him the hero of millions of boys. Beard established a reputation as a naturalist, author, and illustrator years before the Boy Scout movement, and had illustrated the first edition of Mark Twain's *A Connecticut Yankee at King Arthur's Court*. He founded the first class in animal drawing at the Women's School of Applied Design in New York City in 1893, and was instructor (1893-1900). He was editor of *Recreation*, an outdoor magazine, during 1905-06. In 1911 he organized the department of woodcraft at Culver Military Academy and became head of the department, remaining there until 1915. In 1925, celebrating his 75th birthday, 500,000 Scouts joined together to commemorate the event. To mark his 90th birthday, 50,000 Scouts gathered (June 22, 1940) in the Court of Peace at the New York World's Fair to sing "Happy Birthday to Uncle Dan." He kept up his contact with the Scouts through his monthly article in *Boys' Life*, the official publication of the Boy Scouts. His publications include *American Boys' Handy Book* (1882), *Outdoor Handy Book* (1900), *Jack of all Trades* (1900), *Boy Pioneers and Sons of Daniel Boone* (1909), *The Buckskin Book and Buckskin Calendar* (1911), *Shelters, Shacks and Shanties* (1914), *Signs, Signals and Symbols* (1918), *American Boys' Book of Wild Animals* (1921), *American Boys' Book of Birds and*

Brownies of the Woods (1923), *Do It Yourself* (1925), *Wisdom of the Woods* (1927), and his autobiography, *Hardly a Man Is Now Alive* (1939).

Beard, James Thom. American mining engineer; died in Danbury, Conn., Dec. 26, 1941; born in Brooklyn, N.Y., Oct. 19, 1855. He was senior associate editor of *Coal Age* since 1911, and had previously invented the Beard-Mackie sight indicator for testing gas (1903), the Beard deputy safety lamp (1906), and the Beard-Stine centrifugal mine fan (1909). Among his more important appointments were those of assistant engineer of construction of the Brooklyn Bridge (1877-79); surveyor in Iowa for the U.S. Department of Mines (1883-85); associate editor of *Mines and Minerals*; and principal of the School of Coal Mining of the International Correspondence Schools, Scranton, Pa. (1896-1911). He was the author of various technical works, including *Ventilation of Mines* (1894), *Design of Centrifugal Ventilators* (1899), *The Coal Age Pocket Book* (1916), and *Mine Examination Questions and Answers* (1921).

Béhal, Auguste. French chemist, died at Mennecy, France, Feb. 4, 1941; born in 1859. He was professor of organic chemistry, Paris University and Ecole de Pharmacie; member of the Académie de Médecine since 1907 and of the Académie des Sciences since 1921, president of the Académie de Médecine, 1924-25. His publications include *Traité de Chimie organique d'après les théories modernes*, *Travaux sur la chimie organique*, and *Dérivés azoques et leurs applications industrielles*.

Bell, Alexander (Alec). British criminologist, head of the Scotland Yard Criminal Investigation Dept. and credited with introducing the study of criminal psychology and other advanced methods of detection to Scotland Yard; died in London, Eng., July 5, 1941; born, 1887.

Bell, Hemphill. American naval officer; died in Chevy Chase, Md., Nov. 11, 1941; born in Milwaukee, Wis., Mar. 3, 1873. Serving as a sanitary officer in Panama for the Panama Canal Commission during 1910-41, he had served as fleet surgeon of the Pacific Fleet, senior medical officer of the U.S. Naval Academy, and commanding officer of the U.S. Navy Medical School, Washington. Admiral Bell was editor of the U.S. naval medical bulletin (1907-09).

Bell, Thomas M (Montgomery). American Democratic Congressman from Georgia (1905-31); died in Gainesville, Ga., Mar. 18, 1941; born in Cleveland, Ga., Mar. 17, 1861.

Benjamin, Gilbert Giddings. American educator; died in Los Angeles, Calif., May 28, 1941; born in Fond du Lac, Wis., Dec. 6, 1874. After receiving his Ph.D. from Yale (1907), he taught at several universities before coming to the University of Southern California as professor of European History in 1928. For outstanding research in English economic history he was made a fellow of the Royal Historical Society of Great Britain in 1934. Included in his works were *The Germans in Texas—a Study in Immigration* (1910), *Modern and Contemporary European Civilization* (with H. G. Plum), (1923), and articles in magazines.

Bennett, Sir John R. Newfoundland politician; died in St. John's, Newfoundland, Oct. 23, 1941; born in St. John's, Aug. 8, 1866. A member of the Newfoundland House Assembly for many years, he served as Colonial Secretary of Newfoundland and member of the Executive Council (1913-17), as a member of the Legislative Council (1913), and again Colonial Secretary during 1924-28.

Benson, Francis B., Jr. American surgeon and radiologist; died in Philadelphia, Feb. 18, 1941; born

in Philadelphia, 1872. Associated with Hahnemann College and Hospital for nearly forty years as professor of radiology, he was a pioneer in the treatment of cancer with radium, being co-deviser of the Craig-Benson cancer operation.

Berenschot, Gerardus Johannes. Dutch general; died in an airplane crash near Batavia, Netherlands Indies; born in Sumatra, 1877. He had been Commander in Chief of the Netherlands Indies Army since 1939.

Berg, Ernst Julius. American physicist and radio engineer; died in Schenectady, N.Y., Sept. 9, 1941; born in Ostersund, Sweden, Jan. 9, 1871. A co-worker for many years of the late Charles P. Steinmetz, he came to the United States in 1892 and became associated with the General Electric Co. (1892-1909). He was professor of electrical engineering at the University of Illinois (1910-13) and professor of electrical engineering at Union College since 1913, dean of engineering since 1932. He retired in 1941. Dr. Berg was a pioneer in radio development and in 1916 produced the first two-way voice program in the United States. He collaborated with Steinmetz on several technical books and also worked with British mathematicians on calculations of value in electrical engineering. In 1929 Dr. Berg won world recognition as the author of *Heaviside Operational Calculus*, which gave practical mathematical solutions to complex electrical phenomena. His other books are *Electrical Energy* (1908), *First Course in Electrical Engineering* (co-author), (1916), and *Advanced Course in Electrical Engineering* (1916).

Berg, Irving Husted. American educator, dean of the College of Arts and Pure Science at New York University since 1936 and chaplain of the university since 1919; died in New Rochelle, N.Y., Aug. 29, 1941; born in Rocky Hill, N.J., Mar. 1, 1878. Ordained in the ministry of the Reformed Church in 1904, he held various pastorates in New York and Connecticut, and was minister of the Fort Washington Collegiate Reformed Church, New York City, from 1917 to 1936.

Bergen, Hans. German educator and medical scientist; died at Bad Blankenberg, Germany, June 9, 1941; born May 21, 1873. From 1901 to 1905 he tutored at the University of Jena, assistant professor, 1905-19, and thereafter professor of insanity and nervous disorders and director of the clinic. Dr. Bergen wrote a number of books on mental disorders, but his great contribution to medical science was in the extension of the studies made by Sir Charles S. Sherrington and Dr. E. D. Adrian in the use of the vacuum tube for determining the transmission of nervous impulses. Dr. Bergen contrived a delicate recording device by which the impulses of the brain may be charted—the electroencephalograph. Through the study of such charts, or "brain waves," the exact nature of a mental disorder may be determined by a trained diagnostician.

Bergson, Henri. French philosopher; died in Paris, Jan. 4, 1941; born in Paris, Oct. 18, 1859. He was professor of philosophy at Angers, Clermont, and Lycée Henri IV (1891-97), professor of philosophy at the Collège de France (1900-21), member of the Académie des Sciences Morales et Politiques since 1901, and Académie Française since 1914. He won the Nobel Prize for literature (1927), and was chairman of the International Committee on Intellectual Cooperation of the League of Nations (1923-25). The most important French philosopher of his time, Bergson wielded an influence that surpassed that of any thinker since the days of Immanuel Kant. His theories possessed an incomensurate scope and richness, for they not only took in

psychology, morals, and metaphysics, but went beyond the limits of philosophy. His greatest work was *L'Evolution créatrice* (1907) and his *Reflexions sur le temps, Vespèce et la vie, Le matérialisme actuel, Les deux sources de la morale et de la religion* (1932) won the Nicholas Murray Butler Gold Medal in 1940. Among his other publications were *Extraits de Lucrèce* (1884), *Matière et Mémoire: essai sur les relations du corps à l'esprit* (1896), *Le Rire* (1900), and *L'intuition philosophique* (1927).

Bernard, Emile. French painter and novelist; died in Paris, Apr. 19, 1941; born in Lille, France, in 1873. Known as the founder of symbolism in modern painting, he was the author of several books, among them: *Reflections of a Witness of the Decadence of the Beautiful, The Ashes of Glory, After the Fall*, and monographs on *Tintoretto, El Greco, Magnasco, and Manet*.

Bertrand, Louis. French writer and historian, died in Cap d'Antibes, France, Dec. 6, 1941, born in Spincourt, Department of the Meuse, France, 1866. His novels, descriptive works, and books of travel, dealing chiefly with the Mediterranean countries, included *La Fin du classicisme* (1897), *Le Sang des races* (1899), *Pépète le bien-aimé* (1904), *L'Invasion* (1907), *Saint-Augustin* (1913), *Les Martyrs africains* (1930), *Histoire d'Espagne* (1932), and *Le Livre de Consolation* (1934).

Best, Sir Thomas Alexander Vans. British colonial administrator; died at Huntingdon, Eng., Nov. 24, 1941; born, Oct. 8, 1870. In an official career of thirty-seven years, Sir Thomas served as Colonial Secretary, Trinidad (1919-25), Lieutenant Governor of Malta (1925-30); and Governor and Commander-in-Chief of the Windward Islands (1930-33). He retired in 1933. Sir Thomas had also served in British Central Africa (Nyasaland), the Falkland Islands, and three West Indian colonies.

Bianchi, Emilio. Italian astronomer; died in Merate, Italy, Sept. 11, 1941; born, 1875. He was astronomer at Romano College from 1903 to 1922 and since 1922 director of the royal astronomical observatories at Milan and Merate.

Bibesco, Prince George-Valentin. Rumanian aeronautical pioneer; died in Bucharest, Rumania, July 3, 1941; born in Rumania, 1882. Possessor of the twentieth international license to be issued, he was commander-in-chief of the Rumanian Air Force during the Balkan war of 1913. He had been president of the International Aeronautical Federation since 1931. In 1934 he made a 7,000-mile tour of Bulgaria, Turkey, Syria, Egypt, and Libya in his private plane.

Birdseye, Claude Hale. American topographer and geographer; died in Washington, D.C., May 30, 1941; born in Syracuse, N.Y., Feb. 13, 1878. Graduated from Oberlin College in 1901, he became field assistant and later topographer for the U.S. Geological Survey (1901-06); surveyor for the General Land Office (1907-08); with the Geological Survey (except during the World War) from 1909 to 1929 as topographer and geographer, from 1919 to 1929 as chief topographic engineer, and chief of the division of engraving and printing of the Geological Survey since 1932. Among his better known achievements were the mapping of the Kilauea volcano region in Hawaii (1912), and the determination of the height of Mount Rainier, Seattle, Washington.

Bishop, Louis Faugères. American heart specialist; died in New York City, Oct. 6, 1941; born in New Brunswick, N.J., Mar. 14, 1864. Graduated from the Columbia College of Physicians and Surgeons, 1889, and since 1908 a specialist in diseases of the

heart and circulatory system, he was the author of numerous books on heart disease, including *Heart Troubles, Their Prevention and Relief, Heart Disease, Blood Pressure and the Nauheim Treatment; and History of Cardiology*.

Bissell, Richard Mervin. American insurance executive, associated with the Hartford Fire Insurance Co. since 1883 and president since 1913; died in Farmington, Conn., July 18, 1941; born in Chicago, June 8, 1862. He had been chairman of the board of the Hartford Accident and Indemnity Company since 1934.

Blackfan, Kenneth D. American pediatrician; died in Louisville, Ky., Nov. 29, 1941; born in Cambridge, N.Y., Sept. 9, 1883. Professor of pediatrics at the Harvard Medical School since 1923, he was a delegate to the White House Conference on Child Health and Protection in 1930 and served as chairman of the committee on growth and development; was general secretary of the Fifth International Conference of Pediatrics; delegate to the International Commission on Nutrition, sponsored by the League of Nations, in Berlin, 1932; and a member of the Commission on Graduate Medical Education.

Blackton, (James) Stuart. American motion-picture pioneer; died in Hollywood, Calif., Aug. 13, 1941, born in Sheffield, Eng., Jan. 5, 1875. Entering the motion-picture field in 1896, he was a founder of the old Vitagraph Co., the first company to produce film plays, and was the producer of the well-known early films, *The Christian* and *The Battle Cry to Peace*. In 1915 he organized and became the first president of the Motion Picture Board of Trade. In 1925 he sold the Vitagraph Co. to Warner Brothers, Inc., for a price estimated to be over \$1,000,000. Subsequently he met with misfortune and in 1931 was adjudged bankrupt, and in 1935 went on relief. At his death he was doing special technical work for Hal Roach Studios.

Blethen, (Clarance) Bretton. American editor, died in Seattle, Wash., Oct. 30, 1941, born in Portland, Me., Feb. 1, 1879. Associated with the *Seattle Times* since 1900, he had been editor of the newspaper since 1915.

Block, Paul. American newspaper publisher; died in New York, N.Y., June 22, 1941, born in Elmira, N.Y., Nov. 2, 1877. President of Paul Block and Associates, national advertising representatives, he began his newspaper publishing career in 1916 with the acquisition of the Newark *Star-Eagle*, and subsequently acquired newspapers from the Atlantic to the Pacific. Block frequently wrote editorials for his own papers, but, desiring more space, placed them as advertising matter in other papers, hence his two column, bold-face editorials were familiar to millions. During the investigation of the corruption of the Walker administration (James J. Walker, Mayor of New York City) in 1932 it was shown that Walker had received \$246,000 from Block as the result of a joint stock account to which the Mayor had made no contribution. Walker, in defending himself, termed it a "beneficence." In recent years Block's own holdings had dwindled to a few papers, and at his death he was the publisher of only three papers: The Pittsburgh *Post-Gazette*, The Toledo *Blade*, and The Toledo *Times*.

Blumenthal, George. American financier and philanthropist; died in New York, N.Y., June 26, 1941; born in Frankfort on the Main, Germany, Apr. 7, 1858. Coming to the United States as a youth, he became associated with the banking firm of Speyer & Co. from 1883 to 1893, when he was made a partner of Lazard Frères. He retired in 1925 and devoted the rest of his life to art and medicine. In 1934 he became president of the Metropolitan

Museum of Art in New York City, and continued his interest in the Mount Sinai Hospital, of which he was the head from 1911 until his retirement as president emeritus in 1938. He gave over \$1,000,000 to the Metropolitan Museum, and \$2,000,000 to the Mount Sinai Hospital, in addition to numerous other charities and organizations. Blumenthal was the founder of the American Foundation for French Art and Thought, and was made a knight of the Legion of Honor by the French government in recognition of his services. He was also internationally known as an art collector and connoisseur.

Bois, Elie Joseph. French editor of the Paris newspaper *Le Petit Parisien*; died in London, Eng., Apr. 27, 1941. He had escaped to London after the German entrance into France.

Bolles, Stephen. American Congressman; died in Washington, D.C., July 8, 1941; born in Springboro, Pa., 1866. A veteran newspaperman, he was a Republican member of the U.S. House of Representatives since 1938.

Bonine, Fred N. American eye specialist; died in Niles, Mich., Aug. 23, 1941; born in Niles, Oct. 21, 1863. A world-wide authority on the treatment of cataracts, he attracted sufferers from as far as Siam and it is estimated, in the 38 years of his practice, that he treated 1,500,000 patients. Dr. Bonine was also widely-known in that his fee was \$2 for rich and poor alike.

Borglum, Gutzon (John Gutzon de la Mothe Borglum). American sculptor and painter, died in Chicago, Mar. 6, 1941, born in Idaho, Mar. 25, 1871. In 1890 he went to Paris, studied under Rodin, and attended the Julian Academy and the Ecole des Beaux Arts. He came to New York in 1901 and began his mammoth sculpturing out of stone. In 1916 he was commissioned to sculpture the head of Gen. Robert E. Lee on the 800-foot granite face of Stone Mountain. The World War intervened, but he returned in 1924. A dispute with the Stone Mountain Association brought an abrupt end to the entire project and he destroyed his models and plans.

In 1927 he started work on the Mount Rushmore Memorial. This gigantic work—sculpturing, out of granite, the heads of Washington, Jefferson, Theodore Roosevelt, and Lincoln into the cliffs of the Black Hills, South Dakota—brought him the fame that was his at death. The heads measured, from chin to crown, 60 feet. Although he had completed the unveiling of the heads the work was not finished and the project has been turned over to his son, Lincoln, for completion.

The great head of Lincoln in the rotunda of the Capitol in Washington, along with the bronze group, *Wars of America*, and the Lincoln statue, both in Newark, N.J., have been seen by more Americans than have any of his other works. Other notable works are the *Mares of Diomedes* in the Metropolitan Museum of Art; Bryan Memorial, Washington; Princeton University Gargoyles; Thomas Paine Memorial, Paris; and sculptures on the Cathedral of St. John the Divine, New York.

Botana, Natalio. Argentine newspaper publisher; died in Jujuy, Argentine, Aug. 7, 1941; born near Saranda Del Yi, Uruguay, in 1888. He founded the paper, *Critica*, in 1914 and built it into one of the leading evening newspapers, with a circulation of from 300,000 to 400,000. The editorial policy was strongly anti-totalitarian and pro-democratic.

Bottazzi, Filippo. Italian biologist; died at Diso, Italy, Sept. 19, 1941; born in 1867. Professor of physiology at Naples University since 1905, he was rector at the university during 1924-27. He was the Italian delegate on the Inter-Allied Commission in the World War during 1915-18. His publications

include *Trattato di chimia fisiologica* (1898-99), *Das Cycloplasma und die Körpersäfte* (1911-12), and *Fisiologia dell' alimentazione* (with G. Jappelli).

Bouck, Francis Eugene. American Chief Justice of the Colorado Supreme Court for the term 1941-43; died in Denver, Colo., Nov. 24, 1941; born in New York City, Nov. 25, 1873. He had served as a justice in the Colorado Supreme Court during 1933-41.

Bowers, Robert Hood. American composer and conductor; died in New York City, Dec. 29, 1941; born in Chambersburg, Pa., May 24, 1877. Conductor for the Columbia Phonograph Co. during 1916-20 and former musical director of the Aeolian and Columbia Phonograph Companies, he had been musical director of the School of Radio Technique, New York, since 1935. Composer of 34 musical shows between 1903 and 1935, he saw several of them succeed on Broadway, the most successful being *East Is West* (1918), featuring the popular song *The Chinese Lullaby*. He conducted several of the late Victor Herbert's premières.

Bowman, George Ernest. American historian; died in Boston, Mass., Sept. 6, 1941; born in Manchester, N.H., Jan. 5, 1860. Devoting years of study to the history of the Mayflower passengers and to the compilation of the Mayflower genealogies, he was the founder in 1896 and secretary since that time of the Massachusetts Society of Mayflower Descendants. In 1899 he established and edited the society's quarterly publication, *The Mayflower Descendant*; and during 1913-17 he served as editor and publisher of the magazine *Pilgrim Notes and Queries*. He compiled, among others, *Bowman's Ancestral Charts* (1896), *Vital Records of Halifax, Mass.* (1905), *Governor William Bradford's Letter Book* (1906), and *The Mayflower Compact and Its Signers* (1920).

Braisted, William Clarence. American naval medical officer; died in West Chester, Pa., Jan. 17, 1941; born in Toledo, O., Oct. 9, 1941. In the Navy since 1890, he was fleet surgeon, Atlantic Fleet (1912-14); surgeon general of the Navy and chief of the Bureau of Medicine and Surgery (1914-21), and, since 1921, president of the College of Pharmacy and Science in Philadelphia. During 1905-06 he was attending physician at the White House.

Brandeis, Louis Dembitz. American jurist; died in Washington, D.C., Oct. 5, 1941; born in Louisville, Ky., Nov. 13, 1856. Graduated from the Harvard Law School in 1877, he was admitted to the bar in 1878. He was a partner in the law firm of Warren & Brandeis during 1879-97 and in the firm of Brandeis, Durbar & Nutter from 1897 to 1916. In the latter year he was appointed to the U.S. Supreme Court by President Woodrow Wilson, where he remained until his retirement on Feb. 13, 1939.

During his years as a practicing lawyer, he was counsel in many important cases of litigation. In 1910 he was counsel in the famous Congressional investigation of the Ballinger-Pinchot feud, over land-grab coal contracts in Alaska, in the Dept. of the Interior, and, as a result of Brandeis' cross-examination, Richard A. Ballinger, then Secretary of the Interior, retired. He arbitrated the 1910 garment strike in New York City, which affected 70,000 workers and \$180,000,000 worth of business. He succeeded in keeping Boston's transportation under the city's control; in establishing Boston's sliding-scale gas system; and in breaking the industrial life insurance monopoly (which he believed was his greatest contribution to society) by obtaining passage of a State statute allowing savings banks to write policies.

As a Supreme Court justice, Brandeis was noted

for his liberal views and was best known to the public for the dissenting opinions in which he joined with the late Justice Oliver Wendell Holmes. Of the sixteen major New Deal laws which were brought before the Supreme Court, Justice Brandeis upheld the administration in ten instances. A prominent advocate of Zionism, he was chairman of the Zionist Provisional Emergency Committee from 1914 to 1916. In his works he displayed his breadth of learning and his "down to earth" qualities which the preciseness of legality never dulled. His writings include *Other People's Money* (1914), *Business, A Profession* (1914), and *The Curse of Bigness*.

Former Chief Justice Charles Evans Hughes in tribute said that Justice Brandeis "brought his wide experience and his extraordinary acumen to the service of the public interest and in a judicial career of the highest distinction left his permanent impress upon our national jurisprudence."

Brewster, Benjamin. American Protestant Episcopal Bishop of Maine from 1916 to 1940; died in Portland, Me., Feb. 2, 1941; born in New Haven, Conn., Nov. 25, 1860.

Bridges, Robert ("Droch"). American editor; died in Shippensburg, Pa., Sept. 2, 1941; born in Shippensburg, July 13, 1858. A classmate of Woodrow Wilson at Princeton University and an intimate friend of Theodore Roosevelt, Dr. Bridges served as assistant news editor of the *New York Evening Post* (1881-87); assistant editor of *Scribner's Magazine* (1887-1914); and from 1914 to 1930 editor of *Scribner's*. From 1930 to 1939 he acted in the capacity of literary advisor to *Scribner's*, and when the magazine suspended publication in 1939 he lived to see it appear again in a merger with *The Commentator*. He was literary critic of *Life Magazine* from 1883 to 1900 and contributed to both *Life* and *Scribner's* under the pen name of "Droch." Dr. Bridges was the author of *Overheard in Arcady* (1894), *Suppressed Chapters* (1895), and *Bramble Brae* (collected poems), (1902).

Briggs, L(oyd) Vernon. American psychiatrist, author of the Briggs law requiring mental examination before trial of all persons accused of a felony in Massachusetts; died in Tucson, Ariz., Feb. 28, 1941; born in Boston, Aug. 13, 1863. Among his books were *Experience of a Medical Student in Honolulu* (1926), *California and the West* (1931), *Arizona and Mexico* (1932), and *History and Genealogy of the Briggs Family* (1937).

Brooks, Robert C(larkson). American educator; died in Chester, Pa., Feb. 2, 1941; born in Piqua, O., Feb. 7, 1874. A graduate of the University of Indiana (1896), he was professor of Social Sciences at Swarthmore College from 1912 until his death. Included among his writings were: *Corruption of American Politics and Life* (1910), *Teachers' Salaries and Cost of Living* (1913), *Political Parties and Election Problems* (1923), and in 1935 *Deliver Us From the Dictators*. In addition to his books, he wrote for the *Dictionary of American Biography*, and *Encyclopedia of Social Sciences*.

Brown, Carleton. American educator and philologist; died in Montclair, N.J., June 25, 1941; born in Oberlin, O., July 15, 1869. Ordained a Unitarian minister, he remained in the ministry until 1900, and in 1903 went to Harvard as an instructor; was professor of English philology at Bryn Mawr College (1910-17); went to University of Minnesota as professor of English (1918-21); returned to Bryn Mawr (1921-27), and accepted the post of professor of English at New York University (1927), retiring as emeritus in 1939. A scholar of medieval English, he compiled several volumes, including the following: *A Register of Middle English Religious*

and Didactic Verse (part 1, 1916,—part 2, 1920), *Religious Lyrics of the XIVth Century* (1924), *English Lyrics of the XIIIth Century* (1932), *Religious Lyrics of the XVth Century* (1939), *A Manuscript Index of Middle English Verse* (1940). He was the editor of *Venus and Adonis and other poems* (1913), *Poems by Sir John Salusbury and Robert Chester* (1914), *The Stonyhurst Pageants* (1920). As an author he published *A Study of the Miracle of Our Lady Told by Chaucer's Prioress* (1910).

Browne, Dame Sidney Jane. British nurse; died in Cheltenham, Eng., Aug. 13, 1941; born January, 1850. Known as the "modern Florence Nightingale," she had served in four campaigns, including the Egyptian War (1884), the Sudan campaign (1885), the Boer War (1899-1902), and the World War (1914-18). Dame Sidney was the first president of the College of Nursing. She was awarded the International Florence Nightingale Medal, the Royal Red Cross, and the International Red Cross Medal. Her publications include the nursing department of the *Times History of the War* and *Cassell's History of Nursing*.

Browning, William. American neurologist and writer; died in Brooklyn, N.Y., Jan. 5, 1941, born in New London Co., Conn., July 7, 1855. Lecturer on normal neurology at Long Island College of Medicine (1887-1901), professor of neuropsychiatry (1901-26) and thereafter emeritus, he was the author of several medical works, including *The Vents of the Brain and Its Envelopes* (1884), *The Epileptic Interval* (1893), *Circulation in the Central Nervous System* (1897), and *Medical Heredity* (1925). He was one of the founders of the American Medical Library Association (1898), president from 1917 to 1919.

Brush, George de Forest. American artist; died in Hanover, N.J., Apr. 24, 1941; born in Shelbyville, Tenn., Sept. 28, 1855. A conservative artist, he won a wide reputation as an academician and painter of the Italian Renaissance school. He once consummated his point of view with regard to the need of the old masters with "A student learns nothing until he comes under a master. . . . We must not run after new things; we must find out what the masters knew." His paintings hang in many of the museums in the United States. Included among his more noted works are *Mother and Child, At the Fountain* (sold for \$18,000), *In the Garden, Portrait of a Young Woman, The Young Violinist, and Family Group*.

Bryan, Enoch A(lbert). American educator, president of Washington State College, Pullman, from 1893 to 1916 and thereafter president emeritus; died in Pullman, Wash., Nov. 6, 1941; born in Bloomington, Ind., 1855. Graduated from Indiana University (1878), he served as superintendent of public schools, Grayville, Ill. (1878-82); president of Vincennes University, Indiana (1882-93); State commissioner of education for Idaho (1917-23); and research professor of economics and economic history at Washington State College (1923-39).

Byles, Axtell J(ulius). American petroleum executive, president of the Tide Water Associated Oil Co. from 1926 to 1933 and president of the American Petroleum Institute since 1933; died at Ardsley-On-Hudson, N.Y., Sept. 28, 1941; born in Titusville, Pa., Oct. 21, 1880.

Cabot, Philip. American educator, banker, and economist; lecturer of public utility management during 1924-27, professor of the same, 1927-35, and professor of business administration since 1935 at Harvard University; died in Cambridge, Mass., Dec. 25, 1941; born in Beverly Farms, Mass., Aug.

11, 1872. Dr. Cabot had been president and director of many public utility concerns in the Connecticut Valley section during 1904-18, and had been associated with investment banking in Boston during 1912-18.

Cadman, 1st Baron, of Silverdale, John. British oil industrialist; died in Bletchley, Buckinghamshire, Eng., May 31, 1941; born in Silverdale, Staffordshire, Eng., Sept. 7, 1877. He served as inspector of mines in Trinidad (1904); professor of mining at Birmingham University (1908-20), and emeritus thereafter. In 1927 he became chairman of the Anglo-Iranian Oil Co., Ltd., and the Iraq Petroleum Co., and at his death was also director of the Suez Canal Co. and the Great Western Railway. During the World War, he was director of Petroleum Supplies for the Allied forces. Lord Cadman was the author of numerous papers for scientific societies on oil, coal, and iron problems.

Cammerer, Arno (Erthold). Assistant director of the National Park Service (1919-27), associate director (1928), and director (1933-40); died in Cherrystone, Va., Apr. 30, 1941, born in Arapaho, Neb., July 31, 1883.

Campbell, Philip Pitt. American lawyer and congressman; died in Washington, D.C., May 26, 1941; born in Cape Brcton, N.S., Apr. 25, 1862. Elected Republican Representative from Kansas to the 58th Congress (1903), he was reelected to each succeeding Congress, being a member of the 67th session (1923) when he failed of renomination. He was parliamentarian for the 1924 National Republican Convention.

Campinchi, César. French barrister and politician; died in Marseilles, France, Feb. 23, 1941; born in Calcatoggia, Corsica, May 24, 1882. A Radical Socialist, he was Minister for the Merchant Marine in the Chaumetemps Cabinet (1937) and in the next Chaumetemps Cabinet was Minister of Justice. Then he became Minister of the Navy in the Blum Cabinet and continued in that post for the war-time Cabinets of Daladier and Reynaud, resigning, with the rest of the Reynaud Cabinet, June 16, 1940. Throughout his career he consistently advocated resistance to German and Italian aggression. After the Pétain government came into force, M. Campinchi was named as one of those responsible for "throwing our country into war," although he was never brought to trial.

Candler, Warren A(kin). American Methodist Episcopal Bishop; died in Atlanta, Ga., Sept. 25, 1941; born in Carroll Co., Ga., Aug. 23, 1857. Entering the North Georgia Conference of the Methodist Episcopal Church, South, in 1875, he continued in the pastorate until 1886; assistant editor of *The Christian Advocate* (organ M.E.Ch.,S.), (1886-88), president of Emory College (1888-98); Bishop of the Methodist Episcopal Church, South, since 1898; and chancellor of Emory University (formerly Emory College) from 1914 to 1921.

A distinguished, militant, and respected spokesman for the austere Southern Methodist order, he, as Bishop, was instrumental in establishing the church's mission in Cuba, supervised Methodist work in Japan, Korea, and China, presided over numerous Methodist conferences in the South, and for many years, especially in 1925, fought the union between the Northern Methodist Episcopal Church and the Methodist Episcopal Church, South. His publications include *History of Sunday Schools* (1880), *Christus Auctor* (1899), *High Living and High Lives* (1901), *Current Comments on Timely Topics* (1926), and *Young J. Allen, the Man Who Seeded China* (1931).

Cannon, Annie Jump. American astronomer; died in Cambridge, Mass., Apr. 13, 1941; born in Dover, Del., Dec. 11, 1863. Graduating from Wellesley College in 1884, she became an assistant at the Harvard College Observatory (1897-1911), curator of astronomical photographs (1911-33), and in 1933 was named William Cranch Bond astronomer, a post established in honor of the founder of the college observatory. She retired in September, 1940.

Her greatest single achievement—classifying the spectra of a quarter of a million stars to make up the famed Henry Draper catalogue for international use—won her the Henry Draper Medal of the National Academy of Sciences (1931). In 1929 she was listed among "the twelve greatest living American women" chosen by the National League of Women Voters.

Caperton, William Banks. American admiral, commanded the U.S. Pacific Fleet during 1916-19; died in Newport, RI, Dec. 21, 1941; born in Spring Hill, Tenn., June 30, 1855. Admiral Caperton won national recognition through his administration of American intervention in the troubled political affairs of West Indian Latin-American republics (1915-16). During his years in the service he was commander-in-chief, Atlantic Reserve Fleet (1914), commander of the Cruiser Squadron of the Atlantic Fleet (1916), and in charge of the first division of the Pacific Fleet that made a cruise, during World War I along the east coast of South America, helping to win the good will of South American republics. He was promoted to a rear admiral in 1913 and retired in June, 1919.

Carey, Charles Henry. American jurist; died in Portland, Ore., Aug. 26, 1941; born in Cincinnati, O., Oct. 27, 1857. Engaged in the practice of law at Portland from 1883 to 1932 (except in 1888-89), he was vice-president of the American Bar Association (1894-1914), president of the Oregon Bar Association (1912-13, 1922-23), and a founder of the Multnomah Law Library. As a member of the American Council of the Institute of Pacific Relations he attended the institute's third biennial conference at Kyoto, Japan (1929). His publications include *Index-Digest of the Oregon and Washington Reports* (1888), *History of Oregon* (1922), and *A General History of Oregon* (1935).

Carle, Richard. American actor; died in Hollywood, Calif., June 28, 1941; born in Somerville, Mass., July 7, 1871. Making his stage debut at the Bijou Theatre, New York City, in 1891, he was an accomplished comedian who, often as not, wrote his own material, besides dancing and singing—a song and dance man. After years of success on the stage, he turned to Hollywood in 1916, becoming a prominent character actor. The last film in which he appeared was *That Uncertain Feeling*.

Carney, Jim. British prizefighter, died in London, Eng., Sept. 10, 1941; born in Birmingham, Eng., 1858. Prominent in the era of boxing's bare-knuckle days, he was a former English lightweight champion. His most famous and greatest fight took place near Boston, Massachusetts in 1887, when he battled for 74 rounds with Jack McAuliffe, the Irish world champion. After five hours the bout was declared a draw.

Carr, Sir Emsley. British publisher; died in London, Eng., July 31, 1941; born in Leeds, Eng., May 1, 1867. Since 1891 he had been editor of *News of the World*, a weekly newspaper, and since 1935 chairman of the paper. He increased the circulation from 40,000 in 1891 to 4,000,000 in 1939. Sir Emsley was president of the Institute of Journalists (1932-33).

Carson, Frank. American newspaper editor; died

in Tucson, Ariz., Mar. 19, 1941; born in Chicago, in 1881. Associated with Chicago newspapers since 1906, he became city editor of the *New York Daily News* in 1928 and, with the exception of a two year period, remained at that post until 1935, when he became assistant managing editor (1935-40).

Cauldwell, Leslie Giffen. American portrait artist; died in Paris, France, Apr. 9, 1941; born in New York, N.Y., Oct. 18, 1861. Leader of the American art colony in France, he had been president of the American Artists Professional League, with headquarters in Paris. At only 24 years of age his paintings were admitted to the Paris Salon (1886), and during the next fifteen years were displayed prominently at the Society of British Artists, Royal Academy in London, and at the National Academy of Design and the Society of American Artists in New York. Appointed an official delegate to the Eighth International Art Congress held in Paris (1937), he delivered a series of lectures to the Fontainebleau School of Art. A member of the Architectural League of New York since 1894, he was made a member emeritus in 1922.

Cerda, Pedro Aguirre. Chilean politician, President of Chile since 1938; died in Santiago, Chile, Nov. 25, 1941; born in Los Andes, Chile, 1879. The Western Hemisphere's first Popular Front executive, he served as national deputy from Los Andes (1915-18), from Santiago (1918-21); as Minister of the Interior on three occasions (1920-24); Minister of Justice and Public Instruction (1918); national senator from Concepción (1921-27); and Minister of State at various times.

Affluent vineyard owner, lawyer, and politician, President Cerda ascended to his high office on a program of a "New Deal" for Chile. Declaring himself a "believer in democracy" and an admirer of President Roosevelt, Señor Aguirre balanced the acutely divided Right and Left factions in a country that possessed no middle class, only the extremes.

Chaffee, Adna R(omanzo). American major general, died in Boston, Mass., Aug. 22, 1941; born in Junction City, Kan., Sept. 23, 1884. Graduated from the U.S. Military Academy in 1906, he served, during the World War, as acting chief of staff of the 81st division in South Carolina and as commander of the 9th Infantry in Germany, seeing action at the St. Mihiel and Meuse-Argonne offensives. In 1930 General Chaffee advanced the opinion that the next war would see the extensive use of mobile, armored units with high-fire power, and subsequently, when mechanization began, he was appointed commanding officer of the 1st Cavalry (mechanized) in 1934. During 1934-38 he served as chief of the Legislative Planning Bureau, but in 1938 was returned to Fort Knox to command the First Cavalry of the Seventh Cavalry Brigade, mechanized. With the beginning of the current European War, the U.S. Army began to assemble its first armored and tank units, and General Chaffee, then a brigadier general, was appointed head of the force. On Aug. 1, 1941, due to sickness he was relieved of his duties, receiving the oak-leaf cluster citation for "outstanding foresight, judgment, and leadership" in organizing the armored force. On August 4, he was permanently appointed a major general, having held a temporary commission since October, 1940.

Chamberlain, Lady (Ivy Muriel). Widow of Sir J. Austen Chamberlain, former British Foreign Secretary and Nobel peace prize winner in 1926; died in London, Feb. 13, 1941; born, 1876. In 1925 at Locarno, Switzerland, during the international negotiations which led to the Franco-German non-

aggression pact and the return of Germany to the League of Nations, she seized the opportunity for an informal party for the negotiators and, due to her excellent maneuvers, the conference came to a successful conclusion.

Chapin, Charles Value. American health and sanitation expert; died in Providence, R.I., Jan. 31, 1941; born in Providence, Jan. 17, 1856. He served as Superintendent of Health in Providence from 1884 to 1932, when he retired as emeritus. Public health problems throughout the world were solved and improved as a result of the adoption of Dr. Chapin's theories. Included among his publications are *Municipal Sanitation* (1901), *Sources and Modes of Infection* (1910), *How to Avoid Infection* (1917), and *Changes in Type of Contagious Disease* (1926).

Chapman, Blanche (Mrs. Harry Clay Ford). American actress; died in Rutherford, N.J., June 7, 1941; born in Covington, Ky., 1851. A star in the theater during the 1860's and 70's, she played with Edwin Booth and Joseph Jefferson. Her career extended over 82 years.

Chevrolet, Louis. American automobile designer and racer, original designer and manufacturer of the car which bears his name, died in Detroit, June 6, 1941; born in La Chaux de Fonds, Switzerland, in 1879. He came to this country in 1900, and soon became one of the world's leading race drivers, he made new records on every important track, one of them being the then renowned speed of 52.8 seconds for a measured mile (1905). In 1911 he built the first Chevrolet, but having little faith in it sold his holdings in the company and severed all connections with it (1915). In the same year, he developed the Frontenac racer, the cylinder heads of which he later adapted to that of the Model T Fords and marketed, but lost out when the Model A Ford came out. Mr. Chevrolet turned to speedboat racing in 1925, and added many more medals to his collection. The winning of the Indianapolis Speedway, he often said, in 1920 and 1921 with cars he built was his greatest achievement.

Christie, Loring C. Canadian diplomat, Minister to the United States during 1939-41—on leave since February, 1941; died in New York, N.Y., Apr. 9, 1941; born in Amherst, N.S., 1885

Clarke, Charles L(orenzo). American electrical engineer, associate of the late Thomas A. Edison; died in Newton, Mass., Oct. 9, 1941; born in Portland, Me., Apr. 16, 1853. As chief engineer for Edison, he superintended the installation of the Edison electrical lighting central station system (1882) at 275 Pearl Street, New York, the world's first generating plant for current for incandescent lamps. In 1911 he was appointed consulting engineer of the General Electric Co., a position he held until his retirement in 1931.

Claussen, Julia. Swedish ex-opera singer; died in Stockholm, Sweden, May 1, 1941; born in Stockholm, in 1879. Prominent contralto and mezzo-soprano of the Metropolitan Opera Co. from 1917 to 1932, she sang roles in many operas, among them *Tannhaeuser*, *Die Walkuere*, *Lohengrin*, *The Flying Dutchman*, and *La Gioconda*.

Clay, Laura. American suffragist; died in Lexington, Ky., June 29, 1941; born in Madison Co., Ky., Feb. 9, 1849. Nationally known as a pioneer in the woman's suffrage movement, she attained the high point of her career, however, in 1920, when, at the Democratic National Convention, she became the first woman to receive a vote for the Presidential nomination. She received the honor as a tribute to the many years of service she rendered in political and suffragette movements. She was

president of the Kentucky Equal Rights Association from 1888 to 1910. In 1928, at the age of 79, she made a dozen speeches on behalf of Alfred E. Smith, candidate for the Presidency.

Clifford, Sir Hugh. British colonial administrator; died in England, Dec. 19, 1941; born in London, Eng., Mar. 5, 1866. Sir Hugh spent the first twenty years of his career in the Malay States, taking an active part in the suppression of native insurrections and leading special missions to native rulers. He was appointed colonial secretary of Trinidad and Tobago (1903-07) and of Ceylon (1907-12); Governor of the Gold Coast (1912-19), of Nigeria (1919-25), and of Ceylon (1925-27); Governor of the Straits Settlements and High Commissioner for the Malay States and British agent for Borneo (1927-29). Distinguished also as a scholar and writer, Sir Hugh's published works include *Studies in Brown Humanity* (1898), *In a Corner of Asia* (1899), *A Free-Lance of To-Day* (1903), *Heroes of Exile* (1906), *The German Colonies* (1918), and *Bush-whacking and other Asiatic Tales and Memories* (1929).

Coates, John. British tenor; died in Northwood, Eng., Aug. 16, 1941, born June 29, 1865. Making his grand opera debut in *Faust* in 1901, he was one of England's leading tenors for fifty years, and was particularly noted for his excellent diction and musicianly arrangement of his selections, especially his early English airs. He appeared in the United States in 1925, playing at Town Hall, N.Y. City, in a program of early and modern English songs.

Collison, Wilson. American author and playwright; died in Beverly Hills, Calif., May 24, 1941, born in Gloucester, O., Nov. 5, 1893. A prominent scenario writer, he was the author of the Broadway hits *Up in Mabel's Room* (1919) and co-author of *Getting Gertie's Garter* (1921), and the film stories *Blonde Baby* (1931), *Farewell to Women* (1932), *Shy Cinderella* (1932), *Desert Sands* (1924), and *Save a Lady* (1935). He wrote the currently popular *Maisie* pictures.

Cone, Hutch(inson) Ingham. American naval officer; died in Orlando, Fla., Feb. 12, 1941; born in Brooklyn, N.Y., Apr. 26, 1871. Graduating from the U.S. Naval Academy in 1894, his interest lay in engineering, and in 1909 he was appointed head of the Navy's Bureau of Steam Engineering, with the rank of rear admiral and engineer-in-chief. In 1912 he developed the system of wireless shore stations linking the United States, Panama, and American possessions in the Pacific. Retiring on July 11, 1922, he was recalled to government service by President Coolidge, who appointed him vice-president and general manager of the Emergency Fleet Corporation. He resigned a year later, but in 1928 he was made a commissioner of the Shipping Board. President Roosevelt reappointed him to the Board in 1935 and named him chairman. He resigned from the Board (1935) in protest against what he considered its "uncertain course" under Secretary of Commerce Roper. At his death he was chairman of the board of the Moore & McCormack steamship lines. Among the decorations he received were the Distinguished Service Medal, and the Distinguished Service Order (British).

Connah, Douglas John. American artist; died in New York, N.Y., Aug. 23, 1941; born in New York, Apr. 20, 1871. An intimate friend of the late John Singer Sargent, he was director of the New York School of Art (1896-1911), of the Shinnecock Summer School of Art (1897-1900), of the New School of Design (1911-24), and since 1925 co-director of the New York School of Design

(now called American School of Design). His works were exhibited in France, England, and the United States.

Connery, Lawrence J(oseph). American Democratic Congressman from Massachusetts since Sept. 28, 1937; died in Washington, D.C., Oct. 19, 1941; born in Lynn, Mass., Oct. 17, 1895.

Conrad, Frank. American engineer and inventor, credited with the founding of Station KDKA, pioneer broadcast station, and since 1921 assistant chief engineer of the Westinghouse Electric and Manufacturing Co. of Pittsburgh; died in Miami, Fla., Dec. 11, 1941; born in Pittsburgh, Pa., May 4, 1874.

Couch, Harvey Crowley. American utilities executive; died in Couchwood, Ark., July 30, 1941; born in Calhoun, Ark., Aug. 21, 1877. Organizer in 1913 and thereafter president of the Arkansas Power & Light Co., he also organized and was president of the Mississippi Power & Light Co. and the Louisiana Power & Light Co. (1925-36) He was a member of the U.S. Reconstruction Finance Corporation (1932-34).

Coyne, Joseph. American stage actor, appeared in such stage hits as *The District Attorney* (1895), *The Good Mr. Best* (1897), *Girl from Up There* (1901), *In Neuport* (1905), *Nelly Neil* (1907), *The Quaker Girl* (1910), and *No, No, Nanette* (1925); died in Virginia Water (near London), Eng., Feb. 20, 1941; born in New York, N.Y., Mar. 27, 1867.

Csaky, Stephen. Hungarian diplomat, Foreign Minister since December, 1938, died in Budapest, Hungary, Jan. 27, 1941; born, 1897. Count Csaky was a former chargé d'affaires in Rumania, Portugal, and Spain, becoming Minister to Spain in 1934. One of the first Balkan statesmen to jump on the "bandwagon" behind the might of Hitler, Count Csaky, after seeing the fate of Czechoslovakia, hurried to make additional pledges of cooperation to Hitler. On Mar. 21, 1939, he revealed that his efforts had been rewarded with assurances by Germany and Italy that his country would not be invaded "As long as Chancellor Hitler lives there is not the slightest danger that Germany will attack or seek to absorb Hungary or any part of it," he asserted. On Nov. 20, 1940, Count Csaky committed Hungary to the Axis-Tripartite Pact.

Cubberley, Ellwood Patterson. American educator; died in San Francisco, Calif., Sept. 14, 1941; born in Andrews, Ind., June 6, 1868. Graduated from the University of Indiana in 1891, (Ph.D., Columbia University, 1905), he served as professor and president of Vincennes University (1891-96); superintendent of schools, San Diego, Calif. (1896-98), and since 1898 associated with Stanford University, becoming a professor in 1906 and dean of the School of Education in 1917. He retired in 1933 as dean emeritus. In 1933 he presented to Stanford \$548,000 for the erection of a school of education; the public was amazed that a professor could amass such a sum, but Dr. Cubberley explained it by saying that he had made "investments." During his years at Stanford he had edited more than 100 volumes and had written some 18 others, including *School Funds and Their Apportionment* (1905), *School Organization and Administration* (1916), *A History of Education* (1921), *The Principal and His School* (1923), and *Readings in Public Education in the United States* (1934).

Cudahy, Edward A(loysius), Sr. American meat packer; died in Chicago, Oct. 18, 1941; born in Milwaukee, Wis., Feb. 1, 1860. Identified with the meat packing business since 1875, he was one of the founders of the Cudahy Packing Co., becoming

president of the firm in 1910 and chairman of the board since 1926.

Cunningham, Jack. American scenario writer; died in Santa Monica, Calif., Oct. 4, 1941; born in Ionia, Ia. One of Hollywood's most successful writers, he wrote or collaborated on such hits as *Don Q, The Black Pirate, The Covered Wagon, The Thundering Herd, Ruggles of Red Cap, Wagon Wheels, The Arkansas Traveler, and Professor Beware*. In 1936 he produced *Woman Trap* and *Too Many Parents*.

Curran, Pearl Gildersleeve (Mrs.). American composer; died in New Rochelle, N.Y., Apr. 16, 1941, born in Denver, Colo., 1876. A composer of some 40 songs since 1912, her best known works include *Life*, first sung by Enrico Caruso, *Rain, Dawn, Nocturne*, dedicated to and sung by John Charles Thomas, *The Best Is Yet To Be*, and *Sunny Boy*. Her religious songs include *The Lord's Prayer, The Lord Is My Shepherd, and Crucifixion and Resurrection*. She appeared on the radio with a program entitled *A Half Hour With Pearl Curran*.

Curtiss, James Arthur. American capitalist; died in New York City, June 4, 1941; born in New York City, June 1, 1867. Named as one of the 59 men who ruled America, he planned and carried out the unification of the Northern Pacific with the Western Pacific, thereby putting under his control a trunk system from Chicago to California. It is estimated that by shrewd investments he added \$50,000,000 to the large estate (\$26,000,000) which he inherited from his father. A philanthropist, he gave several millions to charitable organizations. Included among his avocations was yachting; he served as Commodore of the New York Yacht Club (1909-10) as well as Commodore of other clubs. His yacht, *Aloha*, was used by him for scientific investigation, and his interest in this respect was shown by valuable gifts to the American Museum of Natural History.

D'Abernon, 1st Viscount, Edgar Vincent. British diplomat, Ambassador to Berlin during 1920-26, died in Hove, Sussex, Eng., Nov. 1, 1941; born in Slinfold, Sussex, Eng., Aug. 19, 1857. In 1882 he was appointed British, Belgian, and Dutch representative on the council of the Ottoman Public Debt, Constantinople, and was president of the council the next year. He was financial adviser to the Egyptian Government, 1883-89, Governor of the Imperial Ottoman Bank in Constantinople, 1889-97; and a Conservative member of Parliament during 1899-1906. His tenure in Berlin was high lighted by three significant events: the signing of the Dawes agreement Aug. 30, 1924, the Anglo-German commercial treaty on Dec. 3, 1924, and the Treaty of Locarno on Dec. 1, 1924. Viscount D'Abernon was the author of several books, including *A Grammar of Modern Greek* (1881), *An Ambassador of Peace* (1929), *The Economic Crisis—Its Causes and the Cure* (1931), and *Portraits and Appreciations* (1931).

Daly, Thomas A. American Paulist priest; died in New York, N.Y., Jan. 8, 1941; born Co. Kerry, Ireland, 1864. Ordained in 1900, he spent most of his career in missionary activities, becoming First Consulor of the Paulist Fathers in the United States in 1934, which position he held at his death. In 1912 he established the Good Shepherd parish in New York City.

Damerel, Donna (Mrs. Peter Fick). American radio actress; starred in the radio drama, *Myrt and Marge*; died in Englewood, N.J., Feb. 15, 1941; born in Chicago, July 8, 1912.

Danforth, William. American stage actor; died in Skaneateles, N.Y., Apr. 16, 1941; born in Syracuse,

May 13, 1867. As a comedian and singer in comic opera, musical comedies, dramas, and motion pictures, he delighted thousands throughout the United States, and as late as 1936 was still a Broadway favorite; but it was in Gilbert and Sullivan shows that he achieved the greatest recognition. These included such hits as *The Mikado, Ruddigore, Pinafore, The Pirates of Penzance, and The Gondoliers*. Besides Gilbert and Sullivan he appeared in such stage history-making plays as *Wang, The Idol's Eye, Blue Beard, The Yankee Consul, Adele, and Florodora*.

D'Arsonval, (Jacques) Arsène. See ARSONVAL, JACQUES ARSENE D'.

Daugherty, Harry M(icaiah). American ex-attorney general of the United States; died in Columbus, O., Oct. 12, 1941; born in Washington Court House, O., Jan. 26, 1860. Largely responsible, as campaign manager, for the election of Warren G. Harding to the Presidency of the United States in 1920, he was rewarded by appointment as Attorney General of the United States, taking office in 1921 and resigning in 1924. His tenure in office was marked by continuous political squabble. His alleged involvement in fraudulent dealings with the Alien Property Custodian's office, in the Teapot Dome Scandal, and various other asserted instances impelled investigation by Senate committees. When, in the Teapot Dome Scandal investigation, the Senate committee requested records from his office and was refused, President Coolidge ordered the release of the records. Attorney General Daugherty resigned.

In spite of his troubles, he managed to accomplish several things that were for the betterment of the American people. He collected millions for the government in war frauds and prohibition cases, appointed J. Edgar Hoover to the Federal Bureau of Investigation, and established a Federal reformatory for first-time offenders, and a Federal women's prison.

In 1927 he was acquitted of Federal charges of conspiracy to defraud the U. S. Government. Fighting to clear his name of all charges hurled against him, he wrote the book *The Inside Story of the Harding Tragedy* (1932).

D'Aunoy, Rigney. American pathologist, died in New Orleans, La., Sept. 17, 1941; born in New Orleans, Aug. 8, 1890. Graduated from Tulane University in 1910 (M.D. 1914), he was instructor in pathology and bacteriology at Tulane (1919-24), and head of the department of pathology of Louisiana State University Medical School from 1931 to 1939, dean during 1937-39.

Davaz, Suad. Turkish diplomat; died in Iran, Aug. 22, 1941, born in Turkey, 1878. He served as Under-Secretary of State for Foreign Affairs (1921); Ambassador to Italy (1923-32); Ambassador to France; and, at his death, Ambassador to Iran. In June, 1939, he signed the French-Turkish treaty, which returned the Hatay Republic to Turkey and joined in a declaration of mutual assistance.

Davenport, Eugene. American educator and agriculturist, outstanding contributor to the agricultural development of Illinois and dean of the College of Agriculture, University of Illinois, during 1895-1922, thereafter emeritus; died in Woodland, Mich., Mar. 31, 1941; born in Woodland, June 20, 1856.

Davies, Sir (Henry) Walford. British musician, author of more than 100 songs and compositions of which his cantata, *Everyman*, the most important, was produced in 1904; died near Bristol, Eng., Mar. 11, 1941; born at Oswestry, Shropshire, Eng.,

Sept. 6, 1869. In 1924 he began a weekly series of radio talks on music, which brought him wide popularity. He was professor of music at the University College of Wales, Aberystwyth (1919-26); organist at St. George's, Windsor (1927-32); and Master of the King's Musick since 1934.

Davis, William Rhodes. American oil operator; died in Houston, Tex., Aug. 1, 1941; born in Montgomery, Ala., Feb. 10, 1889. Entering into international politics in 1939, he gained national notice when it was disclosed that he had gone to Germany, had interviewed high German officials, had obtained peace plans (world peace) from them and, returning to the United States, had presented the plans to the State Department. The State Department never revealed the details of the plans, and it was generally thought that Davis had tried to make peace on Adolf Hitler's terms. In the oil business since 1913, he had won and lost millions in operations throughout the world. He was the go-between in the great barter deals in Mexican expropriated oil, which enabled Germany and Italy to build up a substantial part of their oil reserves before the present war.

Debais, Eugene. Dutch anthropologist; died in February, 1941, at his home in the Netherlands; born at Eysden in the province of Lumburg, Holland, Jan. 28, 1858. Professor of anthropology at the University of Amsterdam from 1898 to 1928, he became internationally known in 1891-92 with his discovery of the first-found skull of the Java ape-man, *Pithecanthropus erectus*. One of the greatest controversies of modern science began in 1894 with the statement by Dr. Dubois that the fragments of the skeleton found by him were the remains of "the ancestor of man," who represented "a transition form between man and the anthropoids which, according to the teachings of evolution, must have existed." Believers in evolution were inclined to support him, but others who, for religious or other reasons, disbelieved the doctrine of anthropogeny rejected and laughed at the discovery.

De Cordova, Rudolph. British dramatic author, journalist and actor; died in London, Eng, Jan 11, 1941; born in Kingston, Jamaica, in 1860. Although he played leading roles in London and New York, he was mainly noted for his writings, which include *Royalities of the World*, *Paris I Have Played* and *Contract (Bridge) in a Nutshell*; as well as the plays, in collaboration with Alicia Ramsey (Mrs. De Cordova), *Monsieur de Paris*, *The Password*, *As a Man Sows*, *The Organ Grinder*, *Edmund Kean*, *The Price of a Hat*, and *The Mandarin*.

Denyn, Jef. Belgian carillonner, died in Malines, Belgium, Oct. 8, 1941; born in Belgium. He became carillonner of Malines in 1881 and held that position until age compelled his retirement in 1932. He was the most famous player of church chimes in the Low Countries.

De Obarrio, Nicanor. Panamanian revolutionary leader, helped lead Panama to its secession from Colombia (1903) and served as its first War Minister; died in Panama, Jan. 17, 1941; born in Brooklyn, N.Y., in 1874.

Darome, Tristan (Philippe Huc). French writer; died at Oloron in the Pyrenees, France, 1941; born in 1889. A poet and essayist and leader of the fantasist school, he was the author of numerous works including *La Flute fleurie* (1913), *La Verdure dorée* (1922), and *l'Enlèvement sans clair de lune* (1925).

De Ugarte, Rafael. Bolivian statesman, president of the Chamber of Deputies; died in Cochabamba,

Bolivia, Nov. 7, 1941; born, 1871. In opposition to the Liberal party's regimes for twenty years, he was a founder (1914) of the Republican party. In 1931 he was appointed Minister of the Treasury. He was elected Vice President of the republic in 1934, but did not take office due to the revolt against President Daniel Salamanca during the Chaco war. In recent years he had been a member of the Chamber as Deputy for Cochabamba and in August, 1940, he was reelected president of that body.

Devaney, John P(atrick). American jurist; died in Milwaukee, Minn., Sept. 21, 1941; born in Lake Mills, Ia., June 30, 1883. Graduated from the University of Minnesota law school (1908), he practiced altogether in Minneapolis, except for the interval from 1933 to 1937 when he was Chief Justice of the Minnesota Supreme Court. Since 1934 he had been a member of the Minnesota Crime Commission, and was a former chairman of the Industry Committee, Wages and Hours Division, of the Department of Labor. He also had been a member of several of President Roosevelt's emergency boards to settle strikes. In 1937 he helped organize the National Lawyers Guild and was its first president.

Dinsmore, Charles Allen. American theologian and literary scholar; died in New Haven, Conn., Aug. 14, 1941; born in New York, N.Y., Aug. 4, 1860. Ordained a Congregational minister in 1888, he had served as professor on the spiritual content of literature at the Yale Divinity School from 1920 until his retirement as professor emeritus in 1939. An authority on the works and life of the poet, Dante, he was the author of several books, including *The Teachings of Dante* (1901), *Aids to the Study of Dante* (1903), *Atonement in Literature and Life* (1906), *Life of Dante* (1919), and *The Great Poets and the Meaning of Life* (1937).

Dolly, Jenny (Janszioka Deutsch). American dancer, partner and sister of Rosie Dolly in the internationally famous dance team, the Dolly Sisters; died in Hollywood, Calif., June 1, 1941, by suicide; born in Hungary, Oct. 25, 1892. From 1909 to 1924 they were headliners on the vaudeville stage in the United States and Europe.

Dormoy, Marx. French politician; assassinated in Vichy, France, July 26, 1941, by means of a time bomb placed under his bed; born, 1888. A prominent Socialist and a militant foe of Fascists, Communists, and Pétain's new order, he was Minister of the Interior in Leon Blum's People's Front Cabinet from 1936 to 1937 and in Chautemps Cabinet from 1937 to 1938. His tenure of office was marked by many incidents, including the removal of Jacques Doriot from the Mayoralty of St. Denis, a working-class suburb of Paris; the kidnapping of General Miller, the White Russian leader in France; and his most notable achievement, the running down of the "Cagoulards" (The Hooded Ones), a Rightist group charged with conspiring to overthrow the Blum Government by violence.

Dos Passos, Szezefredo. Brazilian general and politician; died in Rio de Janeiro, Brazil, Oct. 18, 1941; born in 1873. In the army since 1888, he created and organized the Brazilian army air force. He was Minister of War in the regime of President Washington Luis. General Dos Passos retired from the army when the Luis administration was overthrown by the Vargas revolution in 1930.

Driesch, Hans. German philosopher; died in Leipzig, Germany, Apr. 17, 1941; born at Kreunznach, Germany, Oct. 28, 1867. He was a research worker at the Naples Zoological Station (1891-1900); Gifford lecturer at Aberdeen University (1907-

08); professor of philosophy at Leipzig University (1921-33); and a visiting professor in China (1922-23), in Buenos Aires (1928), and at the University of Wisconsin (1926-27). His published works include *Die Biologie als selbständige grundwissenschaft*, *The Science and Philosophy of the Organism*, *Die Logik als Aufgabe*, *The Crisis in Psychology*, *Der Mensch und die Welt*, and *Die Maschine und der Organismus*.

DuBose, Horace Mellard. American Methodist Church leader; died in Nashville, Tenn., Jan. 15, 1941; born in Choctaw Co., Ala., Nov. 7, 1858. Holder of numerous pastorates throughout the country, editor of several religious magazines and elected bishop in 1918, he was an advocate of unification of the different branches of Methodism and was a member of the original commission appointed (1916) to work out a plan of union.

Duncan, Walter Jack. American artist and illustrator; died in New York, N.Y., Apr. 11, 1941, born in Indianapolis, Ind., Jan. 1, 1881. Well-known for magazine and book illustration, his drawings appeared, from the time he went to England (1905) to do a series of drawings for Scribner's Magazine, frequently in Harper's, McClure's, and other periodicals. Books by Booth Tarkington, Robert Cortes Holliday, and Christopher Morley were among the novels he illustrated. During the World War he was appointed an official artist of the A.E.F., making sketches of all the major engagements in France, besides taking active part as a Captain in the Engineer Corps. In 1939 he wrote the book about art entitled *First Aid to Pictorial Composition*.

Du Puy, William Atherton. American journalist and author; died in Fort Collins, Col., Aug. 11, 1941; born in Palestine, Tex., Jan. 6, 1876. He worked on newspapers in New York, Philadelphia, St. Louis, and New Orleans; became field secretary for the U.S. Navy League (1915-16); originator (1916) and first editor of the publication *Sea Power*; a captain of the Military Intelligence Division, General Staff U.S.A. (1918); general manager of the Haskin Newspaper Service (1919), Public Ledger Syndicate (1920); editor for the International Labor Office of the League of Nations at Geneva (1923); expert with the U.S. Bureau of Efficiency, investigating the currency system (1925); executive assistant to the Secretary of the Interior (1929); and Eastern manager of the Pan-Pacific Press Bureau (1934). He was a former president of the National Press Club. Included among his publications were *Uncle Sam—Wonder Worker* (1913), *Uncle Sam—Detective* (1915), *Hawaii and Its Race Problem* (1932), *The Nation's Forests* (1938), *The Green Kingdom* (1939), and *The Baron of the Colorados* (1940).

Edelstein, M. Michael. American Democratic Congressman from New York; died as a result of a heart attack in the House chamber (Washington, D.C.) after making an ardent speech in which he excoriated those who had been criticising the Jews—"international bankers"—as responsible for inciting the United States toward war; born in Meseritz, Poland, Feb. 5, 1888. A product of New York's lower East Side, he graduated from the Brooklyn Law School (St. Lawrence University) in 1909, and was admitted to the bar in 1910. He maintained a law office for 20 years, during that time representing—in the prohibition era—prominent night clubs in their conflicts with the police, including those of Texas Guinan and Belle Livingston. A firm supporter of President Roosevelt and the Administration's national policies, he succeeded Charles A. Schneider (resigned) in 1939

and in the general elections (1940) was elected for the two year term.

Edwards, Augustin. Chilean financier, diplomat, and publisher; died in Santiago, Chile, June 18, 1941; born in Santiago, June 17, 1878. Holding many diplomatic positions throughout his career, he was a member of the Chilean Congress (1901-02); was Minister of Foreign Affairs in 1903, 1905, 1909, and 1910; was Minister to Italy, Spain and Switzerland (1905-06); was Minister to Great Britain (1910-25) and Ambassador since 1935. In 1921 he became vice-president of the League of Nations, advancing to president in 1922. He was president of the fifth Pan-American Conference (1923); in 1926 assumed presidency of Valparaíso University, and since 1931 was president and publisher of the newspaper *El Mercurio*, in addition to several other papers and periodicals. He visited the United States in 1940 to receive one of the four Maria Moore Cabot prizes awarded for journalistic contributions to Pan Americanism. He wrote several books, mainly political and historical, among them *Mi tierra* (1928), *La técnica del film aplicada a la historia* (1928), *Gentes de antaño* (1929), *El alba* (1931), *Cuatro presidentes de Chile* (1932), and *Recuerdos de mi persecución; Período de zozobras* (1935).

Eichberg, Frederick. Austrian engineer and inventor; died in Ann Arbor, Mich., July 30, 1941; born in Vienna, Germany, 1876. General manager of the Linke-Hoffman car and locomotive factory, Germany, for 11 years and director of the Allgemeine Electricitäts Gesellschaft, Germany, from 1908 to 1938, he was the inventor of the single-phase Winter-Eichberg electric motor, now used by the Pennsylvania Railroad and other railroads in the United States and England. He came to the United States to live in 1938.

Eidmann, Frank Lewis. American mechanical engineer; died in New York, N.Y., Sept. 4, 1941; born in Kingston, N.Y., Dec. 20, 1887. Associate professor of machine design and industrial practice at Princeton University (1923-30) and since 1930 professor of mechanical engineering at Columbia University, he designed parts for some of the first farm tractors made in the United States and did engineering work on the designing of the first gasoline engines for automobiles and airplanes. He was the author of *Economic Control of Engineering and Manufacturing* (1931), and editor of *Aircraft Engine Manual* (1919).

Eilshemius, Louis Michel. American artist; died in New York City, Dec. 29, 1941; born in Laurel Manor, N.J., Feb. 4, 1864. Living in a world outside the realm of normalcy, he became an old, embittered man, failing to accept recognition that came late in his life, and characterizing it as "ashes in my mouth." With the extreme egotism of the fanatic (he called himself "Mightiest Mind of Mankind," "The Supreme Spirit of the Universe," "The Mahatma," etc.), he bombarded *The Sun* (New York) with over 10,000 frenzied letters, held a one-man exhibition of his work to which no one came, attempted to issue an art magazine, printed a pamphlet containing descriptions of crazy inventions, such as a new electric belt, health hints and painting discoveries, and so on.

In 1933, years after he had stopped serious painting, his paintings became the rage of New York. His work was praised by such men as Joseph Stella, Gaston Lachaise, Charles Demuth, and Matisse. Henry McBride, noted art critic, called him "a genuine lyric painter." He is represented in the Phillips Memorial Gallery, Washington, D.C.; Metropolitan Museum of Art, Museum of Modern

Art, Whitney Museum of Art, New York City; Detroit Institute of Art; Cleveland Museum of Art; Luxembourg Museum, Paris; and the Museum of Fine Arts, Boston. He was the author of *And He Sat Among the Ashes*, a biography (1939).

Ellis, Carleton. American research chemist, inventor, and writer; died in Miami Beach, Fla., Jan. 13, 1941; born in Keene, N.H., Sept. 20, 1876. A prolific inventor, he held some 800 patents, ranging from an oil-cracking process used by Standard Oil to a soap which left no rings around the bathtub. He worked extensively in the field of edible oils, fats, waxes, synthetic resins, paints, varnishes, petroleum products, and gasoline manufacture. He was awarded a gold medal at the Jamestown (Va.) Exposition (1907) and the Edward Longstreth medal of the Franklin Institute (1916). Among his publications were: *Hydrogenation of Organic Substances* (3rd edit. 1930), *Synthetic Resins and their Plastics* (1923), (2d edit., 1935), *Chemistry of Petroleum Derivatives* (1934), (vol. 2, 1937), and *Chemistry of Printing Ink* (1939).

Eltinge, Julian (William Dalton). American actor; died in New York, N.Y., Mar. 8, 1941; born in Newtonville, Mass., May 14, 1883. As a female impersonator, he was a popular figure on the stage, in vaudeville, and in motion pictures until his retirement in 1931. Among the plays he appeared in were: *The Fascinating Widow* (1911-14); *The Crinoline Girl* (1914); *Cousin Lucy* (1915-16); and *Countess Charming* (1917-18). The motion pictures he appeared in include *The Widow's Might*, *The Countess Charming*, *The Clever Mrs. Carfax*, and *Over the Rhine*.

Emmerson, Louis L(incoln). American ex-governor; died in Mount Vernon, Ill., Feb. 4, 1941; born in Albion, Ill., Dec. 27, 1863. A leader in Illinois politics, he served as Secretary of State, 1916-28, and as Governor, 1929-33.

Emmet, William LeRoy. American electrical engineer; died in Erie, Penn., Sept. 26, 1941; born in New Rochelle, N.Y., July 10, 1859. Graduated from the U.S. Naval Academy (1881), he served only two years in the Navy before receiving his honorable discharge to enter private industry as an electrical engineer. He became associated with the General Electric Co. in 1892 and remained with that organization until his retirement several years ago.

The holder of 122 patents, his most important work was done in the field of steam turbine inventions and developments; inventing the mercury-vapor power boiler process and developing the method of turbo-electric propulsion of ships. Chairman of the committee on submarines of the Naval Consulting Board during the World War, he was the author of *Alternating Current Wiring and Distribution* (1934), and *The Autobiography of an Engineer* (1931).

Esch, John J(acob). American Republican Congressman from Wisconsin (1899-1920), and chairman of the Interstate Commerce Commission (1927); died in La Crosse, Wis., Apr. 27, 1941; born in Norwalk, Wis., Mar. 20, 1861.

Evans, Sir Arthur. British archaeologist; died at Youlbury, Boars Hill, Oxford, Eng., July 11, 1941; born in Nash Mills, Herts, Eng., July 8, 1851. Traveling in Finland and Russian Lapland and the Balkan countries during the 1870's, he engaged in excavations in Crete from 1893 onwards. His archaeological exploration in Crete resulted in the discovery of a pre-Phoenician script, and in the ruins of ancient Knossos the visual art of one of Europe's earliest civilizations. He rediscovered and restored the great palace of King Minos at Knossos

and proved that Mycenaean pre-Hellenic civilization in Greece was the product of Minoan Crete. His published works include *Cretan Pictographs and Prae-Phoenician Script* (1896), *The Mycenaean Tree and Pillar Cult* (1901), *The Earlier Religion of Greece in the Light of Cretan Discoveries* (1931), and *Jarn Mound* (1933).

Eves, Reginald Grenville. English portrait painter; died in Middleton, Teesdale County, Durham, Eng., June 14, 1941; born in London, 1876. A graduate of the University College School, he soon established a reputation by painting the portraits of many leading figures of England. Among his greatest successes were studies of Thomas Hardy, one of which hangs in the National Portrait Gallery, and the other in the Tate Gallery; Frank Benson, Shakespearean actor, bought by the Luxembourg Galleries in Paris; and a miniature of the Prince of Wales (now Duke of Windsor). In 1931 some of his works (3) exhibited by the Royal Academy were found to have been photographs painted over, and this exposé caused a sensation, but eight years later he was elected to the Royal Academy. He had been official war artist for the B.E.F. since 1940.

Feder, Gottfried. German politician and economist; died in Munich, Germany, Sept. 24, 1941; born in Würzburg, Germany, 1883. One of the oldest leaders of the Nazi (National Socialist) party, he drew up the original twenty-five point program on which the Nazi party was founded in 1922. He marched with Hitler in the Munich putsch of 1923, and was rewarded with the post of State Secretary of the Ministry of Economy (1933). He became a member of the Reichstag in 1924. Hitler, in *Mein Kampf*, said of him: "After I heard the first lecture by Feder, the thought immediately ran through my head that I now had found the way to one of the fundamental concepts for founding the new party." Included among his publications were *Das Manifest zur Brechung der Zinsknechtschaft*; *Der Staatsbankrott die Rettung* (1922), and *Brechung der Zinsknechtschaft* (1932).

Fielding, Mantle. American architect; died in Philadelphia, Pa., Mar. 27, 1941; born in New York, N.Y., Sept. 20, 1865. An outstanding authority on paintings and engravings of the early American era, he was the author of several standard works, which were: *Life and Works of David Edwin, Engraver* (3d volume in Stauffer's American Engravers), (1917), *Life and Works of Thomas Sully* (with Edward Biddle), (1922), *Gilbert Stuart and His Portraits of Washington* (1923), *Dictionary of American Painters, Sculptors and Engravers*, and *Life Portraits of George Washington and Their Replicas* (with John H. Morgan).

Fields, Lew (Lewis Maurice Fields). American comedian; died in Los Angeles, Calif., July 20, 1941; born in New York, N.Y., Jan. 1, 1867. He made his debut on the stage (1877) in partnership with Joseph Weber, his partner in more than sixty years of trouping, in juvenile Dutch sketches at small variety theaters. In 1885 the partners formed a company of their own, which lasted until 1896, when they became proprietors of the Broadway Music Hall, where they commenced a series of burlesques (combining slapstick with German dialect), opening on Oct. 8, 1896.

In 1904 Weber and Fields separated and Fields played on Broadway for some time before they rejoined again in 1912. The Music Hall was reopened in November of that year and they grossed \$300,000 for the season. During the next fifteen years Fields played Broadway nearly always alone,

for Weber had virtually retired. On Sept. 25, 1932, they were guests at a dinner at the Astor hotel, New York, celebrating their golden jubilee in the theater, with President Hoover extending his greetings. Among the plays in which Fields starred were: *About Town*, *The Great Decide*, *Old Dutch*, *The Henpecks*, *The High Cost of Loving*, *Bosom Friends*, and *A Poor Little Ritz Girl*.

Finger, Charles (Joseph). American author and editor, best known for his juvenile writings and tales of adventure in wild regions; died in Fayetteville, Ark., Jan. 7, 1941; born in Willesden, England, Dec. 25, 1869. He won the Newbury Medal (1924), for the most distinguished contribution during the year to juvenile literature, with *Tales from Silver Lands*. In 1929, for his *Courageous Companions*, he won the Longmans Green juvenile fiction prize. He was the author of numerous other books.

Fisher, Clarence Stanley. American archaeologist; died in Jerusalem, July 20, 1941; born in Philadelphia, Pa., Aug. 17, 1876. Acting director of the American School of Oriental Research, he had directed archaeological expeditions to Egypt and Palestine since 1900, having been associated with the Carswell Institute of Philadelphia, Harvard University, the Boston Museum of Fine Arts, Princeton University, Haverford College, Yale University, University of Chicago, and the University of Pennsylvania. Dr. Fisher's greatest discovery was made in 1920, when he excavated the gravestones of Seti I and Rameses II, which verified the biblical Book of Exodus.

Fisher, Frederic (John). American manufacturer; died in Detroit, Mich., July 14, 1941; born in Sandusky, O., Jan. 2, 1878. Organizer, with his brothers, of the Fisher Body Co. (1908) and the Fisher Closed Body Co. (1910), he was president and general manager of both companies until they were grouped together in 1916 as the Fisher Body Corporation. He continued as president and general manager of the Corporation until 1924, when he became vice-president and member of the executive and finance committees of the General Motors Corporation until his retirement in 1934. Well-known for his philanthropies, he established the Burtha M. Fisher Nurses Home of the House of Providence Hospital (1927) and in 1928 gave \$1,000,000 to the Little Sisters of the Poor to found the Burtha M. Fisher Home for the Aged Poor.

Fisher, Hubert Frederick. American Democratic Congressman from Tennessee (1919-31); died in New York, N.Y., June 16, 1941; born in Milton, Fla., Oct. 6, 1877.

Fitzgerald, Cissy (Mrs. C. Tucker). British musical comedy star, appearing in New York City during the Nineties in productions of Charles Frohman and George Edwards; died near Brighton, Eng., May 10, 1941; born, 1873. Thirty years after her retirement from the stage she appeared in motion pictures, one of her latest films being *The Masquerader* in which she co-starred with Ronald Colman.

Fock, Dirk. Dutch politician, Governor General of the Dutch East Indies from 1921 to 1926; died at The Hague, the Netherlands, Oct. 17, 1941; born in 1858. He was a member of the Second Chamber of the Netherlands Parliament (1901-05; 1913-21); Secretary of Colonies (1905-08); and Governor of Surinam during 1908-11. He was Minister of State in 1928.

Fogelqvist, Torsten. Swedish author, critic, and essayist; died at Darlekarlien, Sweden, Jan. 24, 1941; born, 1880. One of the 14 members of the Swedish Academy and attached to the staff of the

newspaper *Dagens Nyheter* since 1919, he was author of the following: *Bok och svard* (1917), *På resa och rot* (1926), *Typer och tänkesätt* (1927), *Till Viktor Rydbergs minne* (1928), *Vasterlandet och den judisktkristna etiken* (1930), and *Jag minns den ljuva tiden* (1935).

Ford, John. American justice; died in New York, N.Y., July 25, 1941; born in Knowlesville, N.Y., July 28, 1862. A member of the New York State Supreme Court from 1906 to 1932, he had served as referee of the Supreme Court since 1932.

Ford, Worthington Chauncey. American historian, died at sea on the way to the United States from Lisbon, Mar. 7, 1941; born in Brooklyn, N.Y., Feb. 16, 1858. He was chief of the Bureau of Statistics of the U. S. State Department (1885-89), and Treasury Department (1893-98); connected with the Boston Public Library (1897-1902); chief of the division of manuscripts, Library of Congress (1902-09); editor of Massachusetts Historical Society (1909-29); and director of the Congressional Library's European Mission (1929-35). His writings included: *American Citizen's Manual* (1883), *The Standard Silver Dollar* (1884), *George Washington* (1899), and he edited the two volume edition of *Letters of Henry Adams* (1930; 1938).

Foster, Richard Clarke. American educator; died in Tuscaloosa, Ala., Nov. 19, 1941; born in Demopolis, Ala., July 12, 1895. President of the University of Alabama since January, 1937, he was serving his second term as president of the Southeastern Conference, an athletic organization of twelve colleges, and was vice president of the Southern University Conference and a former president of the National Association of Separated Universities.

Frankfurter, Salomon. Austrian librarian, archaeologist, and educator, died in Vienna, Austria, Sept. 24, 1941; born in Pressburg, Bratislava, Nov. 9, 1856. An uncle of U.S. Supreme Court Justice Felix Frankfurter, he had been a member of the Vienna University Library since 1894, becoming director in 1919. An outstanding student in philology, archaeology, pedagogics, and Judaism, he received, under the Austro-Hungarian monarchy, the title of Imperial Court Counselor and in the Austrian Republic he served as advisor to the Ministries of Culture and Education. When the Nazis overran Austria in 1938 Professor Frankfurter was imprisoned, but at the instigation of the U.S. Government he was released in March of that year. His publications include *Die Organisation des hoheren Unterrichts in Osterreich* (1897), *50 Jahre osterreichische Mittelschule* (1900), *Das altjudische Erziehungs- und Unterrichtswesen im Lichte moderner Bestrebungen* (1910), and *50 Jahre Eranos-Vindobonensis* (1936).

Franklin, Irene. American actress; died in Englewood, N.J., June 16, 1941; born in New York, N.Y., June 12, 1876. Practically born on the stage, she appeared in vaudeville from 1895 to 1907, turning then to musical comedy, in which her best known role was in *Sweet Adeline* (1929-30). During her later years, she appeared in several motion pictures, but attracted little notice.

Fraser, Earle W. American radio actor; died in Farmington, Mich., Apr. 8, 1941; born in Kitchener, Ont., Canada, 1909. Since 1933 he had been the voice of the "Lone Ranger," a radio serial heard over a national network. The broadcasts were estimated to be heard by fifteen millions, mostly children, and depicted the "Lone Ranger" as a hard-riding crusader against all crime and injustice.

Frazer, Sir James (George). British anthropologist and folklore scholar; died in Cambridge, Eng., May 7, 1941; born in Glasgow, Scotland, Jan. 1,

1854. As one of the world's most established authorities on folklore, he published a wealth of material on taboos, magic, superstition, myths, and primitive belief and rites. His most important and best known work, *The Golden Bough*, was first published in 1890 and grew, as a result of his research, into twelve large volumes twenty-five years later. *The Golden Bough* is a vast collection of savage and civilized beliefs and customs, and is considered to be among the greatest works on anthropology. As Sir James delved further into the study of folklore, he found that one link of a chain leads to another, for book after book flowed from his hands, until in 1932 blindness forced itself upon him. He recovered his eyesight, after four operations, and continued his writing of a several volume work dealing with *Fear of the Dead in Primitive Religion*. In 1937 he wrote what he considered his finest work, *Totemica*, a record of primitive social organizations whose history is told by totem poles from Australia to Canada. He was knighted in 1914, elected a fellow of the Royal Society (1920), and received the Order of Merit (1925).

Freundlich, Herbert Max Finlay. German chemist; died in Minneapolis, Minn., Mar. 30, 1941; born in Germany, 1880. After the World War he became honorary professor at the University of Berlin and associate director of the Kaiser Wilhelm Institute in Berlin. He came to the United States in 1938, direct from five years of lecturing at University College, London, to teach at the University of Minnesota, where he was named Distinguished Service Professor of Colloid Chemistry. He was the author of a number of authoritative books on chemistry.

Frew, Walter Edwin. American banker; died in New York, N.Y., May 19, 1941; born in Brooklyn, N.Y., July 18, 1864. Beginning as a clerk in a bank, he rose to the position of president of the Corn Exchange Bank (1911-29) and in 1929 became chairman of the board when the bank changed to the Corn Exchange Bank Trust Company. As president, and as chairman, he was largely responsible for the growth and development of its network of branches (74) throughout New York City.

Fuller, Stuart J(amieson). American narcotic expert and diplomat, died in Washington, D.C., Feb. 2, 1941; born in Keokuk, Ia., May 4, 1880. A world authority on illicit narcotic suppression, and during 1932-39, U.S. representative, in an advising capacity, to the advisory committee of the League of Nations and delegate to the Conference for the Suppression of the Illicit Traffic in Narcotic Drugs (1936). He held various consulate posts throughout the world, becoming divisional assistant in the State Department, 1930-31, and thereafter assistant chief of the Far Eastern Division.

Gaubert, Philippe. French musician; died in Paris, July 9, 1941; born in Cahors, France, 1879. He was a pupil of Taffanel; was the first Rome Prize winner (1905); was professor of the Paris Conservatoire since 1919; and leader of the orchestra of Grand Opera since 1920 and of Société des Concerts. His works include *Philotts* (ballet) (1914), *Fresques* (1923), *Naila* (1926), and *Les Chants de la mer, Josiane, Les Stances* (1929).

Gehrig, Lou. American baseball player; died in New York, N.Y., June 2, 1941; born in New York, N.Y., June 19, 1903. Star first baseman of the New York Yankees, American League, he played fifteen seasons (June 1, 1925-May 1, 1939) without missing one game, setting a modern record that will stand for many years to come. Known as "Iron Horse Lou," "Columbia Lou," Gehrig was the

epitome of sportsmanship and clean living. Suffering from a form of infantile paralysis that caused the muscles to shrivel, he found that he no longer could play first base as of old, and of his own volition retired from the game (1939), an act that won the admiration of all baseball men, as well as the general public. A few of the records that he held were: Most consecutive games—2,130; Most years 150 or more runs batted in—7; Most home runs with bases filled—23; Most consecutive home runs in one game—4 (modern record); Most years, leading league, runs batted in—5 (tied with Ruth).

Geyer, Lee E(dward). American Democratic Congressman from California since 1939; died in Washington, D.C., Oct. 11, 1941; born in Wetmore, Kan., Sept. 9, 1888.

Gherardi, Bancroft. American communications engineer; died near Sudbury, Ont., Canada, Aug. 14, 1941; born in San Francisco, Calif., Apr. 6, 1873. Associated with the American Telephone and Telegraph Co. from 1907 to 1938, he had served as chief engineer and vice-president since 1920. In 1928, as president of the American Institute of Electrical Engineers, he formally opened a transoceanic radio-telephone circuit to London, establishing a new era in the history of communications. He was elected to the National Academy of Science in 1933, and was the recipient of the 1932 Edison Medal "for contributions to the art of telephone engineering and development of electrical communication." Among Gherardi's outstanding engineering feats were the construction of the Boston-Washington underground cable, the completion of three transcontinental lines, and the building of the New York-Chicago cable.

Gillespie, L(ouis) J(ohn). American chemist and educator; died in Boston, Mass., Jan. 24, 1941; born in Hillsboro Bridge, N.H., 1887. He was a fellow in bacteriology at the Rockefeller Institute for Medical Research, New York (1911-13); scientist for the Bureau of Soils of the U.S. Dept. of Agriculture (1913-15); biochemist in the Bureau of Plant Industry (1915-19), and teacher of physical chemistry at Massachusetts Institute of Technology since 1920.

Goldmark, Henry. American civil engineer; died in Nyack, N.Y., Jan. 15, 1941; born in New York, N.Y., June 15, 1857. Educated in the United States and Germany, he was one of the first to use steel in bridge construction. Among the many projects with which his name is connected are the drawings for concrete viaduct crossing Rock Creek Park, Washington, D.C. (1897); design of lock gates for the proposed ship canal from Great Lakes to Tidewater (1898-99); rebuilding Railroad and Highway Bridge across Missouri River (1899-1902), and the Panama Canal locks (1906-13).

Goldstein, Max Aaron. American otolaryngologist, died in Frankfort, Mich., July 27, 1941; born in St. Louis, Mo., Apr. 19, 1870. Founder (1914) and since director of the Central Institute for the Deaf at St. Louis, he taught otology and laryngology at St. Louis University (1900-12). He received the annual St. Louis Reward of Achievement in 1933 for his research in the problems of the deaf.

Gomes, Manuel Teixeira. Portuguese politician and writer; died in Bougie, Algeria, Oct. 18, 1941; born in Portugal, 1871. He was Ambassador to Great Britain from 1911 to 1923 and President of Portugal during 1923-25. Dr. Gomes wrote *Sambina Freire, Caritas Sem moral nerhuma, Maria Adelaide, Agosto Azul*, and other works.

Goodrich, Arthur (Frederick). American author and playwright; died in New York, N.Y., June 26, 1941; born in New Britain, Conn., Feb. 18, 1878. He be-

gan serious writing in 1900, but achieved his greatest success years later, when his play, *Caponsaccht*, won the gold medal of the Theater Club, Inc., as the best play of the 1926-27 season; it was presented by the Metropolitan Opera Association (1937). Among his plays were: *So This Is London* (1922), *The Ring of Truth* (1923), *The Joker* (1925), and *The Perfect Marriage* (1932). His novels included *Gleam o' Dawn* (1908), *The Lady Without Jewels* (1909), *The Man with an Honest Face* (1911), *You Wouldn't Believe It* (1936), and *The Sound of Wings* (1941).

Granger, Walter. American paleontologist; died in Lusk, Wyo., Sept. 7, 1941; born in Middletown, Vt., Nov. 7, 1872. Associated with the American Museum of Natural History since 1890 and curator of fossil mammals since 1927, Dr. Granger was best known for the ten eventful years he spent with the central Asiatic expeditions into China and Mongolia conducted by Dr. Roy Chapman Andrews between 1921 and 1931. As chief paleontologist of the Andrews expedition, he participated in the discovery of unhoped-for numbers of dinosaur remains, and also in the uncovering of many fossilized eggs of the giant beasts, which attracted wide interest. During his life, Dr. Granger had taken an active part in 28 expeditions, but due to the international situation had, in recent years, confined his work to the Western Bad Lands. He was the author of several books on paleontology and was well known as a college lecturer.

Grattan-Doyle, Sir Nicholas. British legislator; died in London, Eng., July 14, 1941; born Aug. 18, 1862. He was a Conservative member of Parliament from 1918 to 1940.

Graux, Lucien P. Belgian industrialist, died in Brussels, Belgium, during May of 1941; born in Belgium, 1872. He was president of the Belgian Society of Engineers and Industrialists in 1932, and was a director of the Belgian State Railways, Brussels Tramways and Cie. Belge des Chemins de fer et d'Entreprises. At his death he was president of the Central Industrial Committee, a federation of Belgian industrial organizations.

Gregory, Menas Sarkis. American psychiatrist and neurologist; died in Tuckahoe, N.Y., Nov. 2, 1941; born, 1877(?). Graduated from the Albany Medical College, New York, in 1898, Dr. Gregory was appointed to the psychiatric staff at Bellevue Hospital, New York City, in 1902 and two years later became head of the division, remaining as such until 1934. Dr. Gregory also served as consultant in psychiatry at the New York Neurological Institute, as professor of psychiatry at the New York Post Graduate Medical (1914-16), and as professor of psychiatry at the New York University College of Medicine (1922-26). In 1931 Dr. Gregory was given charge of a new psychiatric clinic, established as part of the Court of General Sessions, New York City, to study the psychiatric, clinical, and psychologic factors in the make-up of criminals. An expert witness on insanity, he was called in by either the state or the defense in scores of trials. He was well known to the public for his opinions on mental hygiene.

Gresley, Sir Herbert Nigel. British engineer; died in Hertford, Eng., Apr. 5, 1941; born June 19, 1876. He was the designer of the railroad engines Flying Scotsman, Coronation Expresses, and Silver Jubilee, of which the latter attained a speed of 112 m.p.h. (1936), breaking the British record. In 1939 the Mallard engine that Gresley designed broke the world record for steam traction, reaching a speed of 127 m.p.h. Sir Nigel was the inventor of articulated rolling stock, which reduced the weight

of trains, and the superior valve gear for three cylinder engines.

Gray, Clifford. English song writer; died in Ipswich, Eng., Sept. 26, 1941; born in Birmingham, Eng., Jan. 5, 1887. One of the better known lyric writers and author of the song *If You Were the Only Girl in the World*, he wrote the lyrics for such famous musical comedies as *The Bing Boys Are Here* (1916); *Sally* (1920); *Artists and Models*, *June Days*, and *Gay Paree* (1925); *A Night in Paris* (1926); *Hit the Deck* (1927); *The Three Musketeers* (1928); *O You Letty* (1937); and *Lambeth Walk* (1939).

Grimshaw, Robert. American engineer, inventor, and writer; died in Englewood, N.J., Apr. 9, 1941; born in Philadelphia, Pa., Jan. 25, 1850. He graduated from Andalusia College (1869), and in 1873 opened a consulting office in Philadelphia. In the last half century he numbered among his clients many large industrial firms, the U.S. War, Navy, and Treasury Departments, and the governments of New South Wales, Bavaria, and pre-war Bohemia. He held patents on lathe tools, core boxes, printing and bookbinding machinery, and projection apparatus, and made many inventions that were not patented; also he perfected technical improvements for railroads, foundries and other metal working plants, petroleum and vegetable oil refineries, newspapers, and many other industries.

Dr. Grimshaw retired in 1932, and interested himself in the aiding of the blind. As a result he founded *Blindaid*, a system by which he, and his assistants, sent out daily news flashes, books, magazine articles, letters, and short stories to blind children as well as adults.

Dr. Grimshaw was a prolific writer on engineering subjects, being the author of countless pamphlets and articles (including works written in French and German); perhaps his best known book is *The Locomotive Catechism* which has passed through 30 editions since 1888. Other books are: *Why Manufacturers Lose Money* (1922), *The Modern Foreman* (1923), and *Machine Shop Chat* (1923).

Grindell-Matthews, Harry. Welsh inventor; died near Swansea, Wales, Sept. 11, 1941; born March, 1880. Something of a man of mystery in the world of science, he received wide publicity in 1924 when he declared he had invented a "death ray," which would bring down airplanes at a distance. Although he announced that he was dickering with the military powers of France, England, and the United States, so far as the public knows, his lethal ray has not been employed during the present war. Since 1930 he had been engaged upon methods of defense from air attack and underwater craft. Among the inventions credited to him were devices for wireless control of torpedoes, airplanes, and motor boats; a device for wireless communication between motor cars; various submarine detecting devices invented during the World War, and the "luminaphone," an organ played by light.

Gruber, L. Franklin. American clergyman and educator; died in Chicago, Dec. 5, 1941; born near Reading, Pa., 1871. Graduated from Muhlenberg College, Pennsylvania, in 1898 and ordained in the Lutheran ministry in 1901, he had been president of the Chicago Lutheran Theological Seminary since 1927. Dr. Gruber was the author of numerous religious and mathematical books, including *The Version of 1611* (1913), *Documentary Sketch of the Reformation* (1917), *The Wittenberg Originals of the Luther Bible* (1918), *The Freedom of the Will* (1923), *What After Death?* (1925), and *The First New Testament and Luther* (1928).

Guertner, Franz. German cabinet minister; died in Berlin, Jan. 28, 1941; born in Germany, in 1871. He was Minister of Justice in Bavaria, 1922-32, and German Minister of Justice since 1932. Dr. Guertner obtained the latter post during the conservative regime of Franz von Papen (immediately preceding Nazism), but his strongly nationalistic creed, his ignoring of Parliamentary procedure, his hatred of Jews, his embodiment of the Nazi conception of justice and jurisprudence, and his inclination to overrule standard legal precedents made him an ideal Hitler satellite. Hitler reappointed him Reich Minister of Justice in 1933.

Guggenheim, Simon. American ex-senator, industrialist and philanthropist; president of the American Smelting and Refining Co. since 1919; died in New York City, Nov. 2, 1941; born in Philadelphia, Dec. 30, 1867. He was a Republican member of the U.S. Senate from Colorado during 1907-13. In memory of his son he established in 1925 the John Simon Guggenheim Memorial Foundation. The foundation provides fellowships to scholars, writers, scientists, musicians, biologists, physicists, poets, artists, composers, etc., to pursue their work or studies in all parts of the world, and are open to students in the United States, Canada, and Latin America, without regard to sex, race, creed or color. In addition to this foundation, he also contributed liberally to educational and charitable institutions.

Guggenheim, William. American industrialist, philanthropist, and publicist; died in New York City, June 27, 1941; born in Philadelphia, Pa., Nov. 6, 1868. Superintendent of the Philadelphia Smelting and Refining Co. in Colorado during 1889-90, he was general manager of the various mining and smelting interests of M. Guggenheim's Sons in Mexico from 1890 to 1900. His writings include *William Guggenheim*, under the pseudonym of Gatenby William (1934), and the booklets *Our Republic Triumphant*, *Peace by Victory at Last*, *but With a Warning*, *A Greater America*, *The New World*, *What Price Government*, *Industry*, *Labor and Bolshevism*, and *With a Prophecy*.

Gulland, George Lovell. British physician; died in Edinburgh, Scotland, May 4, 1941; born in Edinburgh, 1862. Professor emeritus of medicine at Edinburgh University from 1915 to 1928, he was one of the world's leading authorities on blood diseases. In 1893 and 1895 he won research prizes offered by the Royal College of Physicians.

Gunther, Franklin Mott. American diplomat, Minister to Egypt in 1928-30, and to Rumania since 1937; died in Bucharest, Rumania, Dec. 22, 1941; born in New York City, Feb. 28, 1885. In the diplomatic service since 1908, he served with numerous embassies and legations. He was counselor of the embassy at Rome (1920-24), and chief of the Division of Mexican Affairs, U.S. Department of State (1924-28). During 1930-37 he was president of the American Institute for Iranian Art and Archaeology.

Hajek, Marcus. Viennese physician and educator; died in London, Eng., Apr. 3, 1941; born in Hungary, 1860. Friend of Dr. Sigmund Freud, he was chief of the University of Vienna Rhinologyngological Clinic for about fifteen years, retiring in 1933. He was the author of the standard textbook *About Sinus Diseases*, and *On the Diseases of the Larynx*, translated into many languages.

Hall, Grover Cleveland. American associate editor of the *Montgomery Advertiser* (1910-26) and editor thereafter; died in Montgomery, Ala., Jan. 9, 1941; born in Haleburg, Ala., Jan. 11, 1888. He was awarded a Pulitzer prize of \$500 for "the best

editorial writing in 1928," for editorials in *The Advertiser* against gangism and racial and religious intolerance.

Hanus, Paul Henry. American educator; died in Cambridge, Mass., Dec. 14, 1941; born in Hermsdorf, Prussia, Mar. 14, 1855. Graduated from the University of Michigan in 1878, Dr. Hanus became assistant professor of history and art of teaching, 1891-1901, professor, 1901-21, and professor emeritus since 1921 at Harvard University. In 1906 he was appointed chairman of the Massachusetts State Commission of Industrial Education. A founder of the National Society of College Teachers of Education, he served as its president in 1910. In 1915 he became vice president of the American Association for the Advancement of Science. Dr. Hanus was the author of many books on educational matters, including *Elements of Determinants* (1886), *Geometry in the Grammar School* (1894), *Educational Aims and Educational Values* (1899), *School Efficiency* (1913), *School Administration and School Reports* (1920), and *Adventuring in Education* (1937).

Harris, James Rendel. British archeologist, theologian, and biblical scholar; died in London, Mar. 1, 1941; born in Plymouth, Eng., 1880. One of the best informed authorities on Old Testament history, he taught at two schools in the United States—Johns Hopkins University (1882-85) and Haverford College (1886-92). He spent many years of his life traveling extensively in search of manuscripts, and writing numerous books on the Bible, legends, ancient manuscripts, and other subjects—a total of more than 100 books.

Harris, Sam H. American theatrical producer; died in New York, N.Y., July 3, 1941; born in New York, Feb. 3, 1872. One of Broadway's most eminent and successful producers, he became associated with George M. Cohan under the firm title of Cohan & Harris (1904-20). The firm produced such hits as *Forty-five Minutes From Broadway*, *George Washington, Junior*, *Popularity*, *The Talk of New York*, *Get-Rich-Quick Wallingford*, and *The Red Widow*. The partnership dissolved with the actors' strike of 1919 and Harris went ahead as an independent producer. During the next years his intuitive instinct for successful plays produced such outstanding favorites as *Rain*, *The Coconuts*, *Animal Crackers*, *Cradle Snatchers*, *The Jazz Singer*, *June Moon*, *Dinner at Eight*, *I'd Rather Be Right*, and *Of Mice and Men*. During the latter career, he achieved the singular honor of producing three Pulitzer prize winners, *Icebound* (1923), *Of Thee I Sing* (1932), and *You Can't Take It With You* (1937). His latest endeavors were *George Washington Slept Here* (1940), *Lady in the Dark* (1941), and, at his death, the current *The Man Who Came to Dinner*.

Harrison, Pat (Byron Patton). American Senator (Dem.) from Mississippi; died in Washington, D.C., June 22, 1941; born in Crystal Springs, Miss., Aug. 29, 1881. Admitted to the bar (1902), he was elected to the U.S. House of Representatives in 1910, subsequently being reelected to three additional terms (1912-18). In 1918 he ran for the U.S. Senate, defeated the incumbent, James K. Vardaman, and was reelected to the Senate in 1924, 1930, and 1936.

An old-line deep South legislator, Senator Harrison was a top-ranking conservative Democrat, and had abandoned blind party loyalty, during the second Roosevelt term, by abruptly refusing to follow certain aspects of the New Deal. He became chairman of the Senate Finance Committee in 1933 and as such played a major part in helping the late Sen. Joe T. Robinson and former Vice-President

Garner prod the original NRA bill, the Social Security bill, the Beer bill, parts of the original Agricultural Adjustment Act, and other measures through the Senate. He drew his first frowns from the White House in 1937 when he proposed cutting the Administration's huge relief expenditures, and then showed his disinclination toward packing the Supreme Court. This attitude likely cost him the post of Senate majority leader (1937), for President Roosevelt overtly indorsed Sen. Alben W. Barkley, and Harrison was the loser by one vote. Still obstinate, he organized the drive which led to repeal of the undistributed corporate profits tax (1938), one of the President's favorite fiscal policies. (In spite of his differences with the President over domestic problems, he had firmly adhered to the foreign policy of the Administration and worked strenuously for the Hull reciprocal trade agreement program.) The breach was apparently cured in 1940 when President Roosevelt appointed him President pro tempore of the Senate.

It was evident, last year, that Senator Harrison's health was fading, but he refused to abandon the capital during the lease-lend debates, saying "Old Pat won't go away till this bill is acted upon. We've got to bring this thing to an end."

Hartman, Lee Foster. American editor; died in New York, N.Y., Sept. 23, 1941; born at Ft. Wayne, Ind., Oct. 2, 1879. Graduated from Wesleyan University in 1901, he was associated with Harper & Bros., publishers, from 1904 and since 1931 had been editor of *Harper's Magazine*.

Harty, Sir (Herbert) Hamilton. British conductor and composer, conductor of the Halle Orchestra in Manchester, 1920-33, and guest conductor in tours of both the United States and England; died in Brighton, Eng., Feb. 19, 1941; born in Hillsborough, Co. Down, Ireland, Dec. 4, 1880. His compositions include *Comedy Overture* (1907), *With the Wild Geese*, *The Children of Lir*, and *The Mystic Trumpeter*.

Hawley, Willis (Hatman). American Republican Congressman from Oregon (1906-32); died in Salem, Ore., July 24, 1941; born near Monroe, Ore., May 5, 1864. Regarded as an authority on tariff and taxation, he, with the late Sen. Reed Smoot, presented the Smoot-Hawley tariff act and led the 13 months' fight to its final approval by the President (1930). Hawley was an extreme advocate of protective tariff measures and contended, when the Smoot-Hawley bill was bitterly attacked, that it was intended as "an alert guard protecting our industries and labor against unfair competition, improper trade practices and exclusion from an advantageous participation in our markets, which markets our people have created and maintain." He was appointed chairman of the House Ways and Means Committee in February, 1928, and was chairman of the caucus of House Republicans from 1926 to 1932.

Hay, Eduardo. Mexican soldier and diplomat, Secretary of Foreign Affairs during 1935-40; died in Mexico City, Mexico, Dec. 27, 1941; born in Mexico, Jan. 29, 1877. Graduated from Notre Dame, South Bend, Ind., in 1901, he began his political career (1911) as chief of staff of Francisco I. Madero during the first Mexican revolution, and accompanied Madero on his triumphal entry into Mexico City. In 1912 he was elected deputy to the National Congress, and in 1913 participated in the Constitutionalist movement in Sinaloa as chief of staff of General Ramón Iturbide. General Hay was successively Minister Plenipotentiary to Italy, Japan, Chile, Peru, Guatemala, and France. He also occupied the posts of Under-Secretary of Commu-

nications and Public Works, Director of Public Welfare, and Director of Customs.

Hayes, Commodore Sir Bertram Fox. British International mercantile marine officer; died in Crosby, Liverpool, Eng., May 15, 1941; born in Birkenhead, Eng., Apr. 26, 1864. Former commodore of the White Star Line, he was a World War hero, and was knighted and won the Distinguished Service Order for his success in sinking two submarines. In 1925 he wrote his autobiography, *Hull Down, Reminiscences of Windjammers, Troops, and Travelers*.

Hazen, Charles Downer. American educator and historian; died in New York, N.Y., Sept. 18, 1941; born in Barnet, Vt., Mar. 17, 1868. Graduated from Dartmouth College (1889), he was professor of history at Smith College (1894-1914); and professor of European history at Columbia University (1916-37). He retired in 1937 as professor emeritus. Author of many well known works on European history, especially the French Revolution, he published *Contemporary American Opinion of the French Revolution* (1897), *Europe since 1815* (1910), *Modern European History* (1917), *Fifty Years of Europe* (1919), *The Kaiser vs. Bismarck* (1921).

Head, Frederick Waldegrave. Australian prelate, Anglican Archbishop of Melbourne since 1929; died in Melbourne, Dec. 18, 1941; born in London, Eng., Apr. 18, 1874. Archbishop Head had served in World War I as senior chaplain to the Guards Division of the B.E.F., 1917-18, as Vicar of Christ Church, Greenwich, 1922-26, chaplain to the King, 1922-30, and canon and subdean of the Liverpool Cathedral, 1926-29.

Heckscher, August. Capitalist; died in Lake Wales, Fla., Apr. 26, 1941, born in Hamburg, Germany, Aug. 27, 1848. He came to the United States in 1867, and engaged in the coal business until 1884; an organizer of the Lehigh Zinc & Iron Company (1881), later consolidated with others into the New Jersey Zinc Company, he was general manager of this Company until 1904. In 1912 he became interested in New York real estate and purchased property in the vicinity of Forty-Second street, where he foresaw a high appreciation in values.

Through his interest in philanthropy he conceived the Heckscher Foundation Building (1922) for children, in New York, toward which he donated \$5,000,000. He provided for the continuation of the foundation, and in 1929 added \$4,000,000 to the children's fund for the maintenance of day nurseries, dental clinics, and playgrounds in the congested areas of the city. At his death he was a director of the Empire Trust Company, chairman of the board of directors of the Union Bag and Paper Corporation, and a director of the Crucible Steel Company.

Heinz, Howard. American industrialist; died in Philadelphia, Pa., Feb. 9, 1941; born in Pittsburgh, Pa., Aug. 27, 1877. He graduated from Yale in 1900, and began working in his father's firm, the H. J. Heinz Company; on the death of his father (1919) he assumed the presidency. During the World War he served as U.S. Food Administrator in Pennsylvania—among other various positions—and after the war he was director general of the American Relief Administration for Southeastern Europe and Asia Minor. In 1927 he gave Yale University \$100,000 to endow the "Howard Heinz Students' Educational Fund." In September, 1940, he sent \$80,000 to England to enable the British to build more planes.

Henry, Jules. French diplomat, appointed Ambassador to Spain, October, 1938, to Brazil, April, 1939, and to Turkey, September, 1940; died in Ankara, Turkey, June 10, 1941; born in France, 1889.

He was generally accredited as being one of the most efficient of foreign diplomats.

Hess, Sol. American cartoonist, creator of the syndicated comic strip *The Nebbs*; died in Chicago, Dec. 31, 1941, born in Wisconsin, 1872.

Hewlett, (James) Monroe. American architect; died in Lawrence, Long Island, N.Y., Oct. 18, 1941; born in Lawrence, Aug. 1, 1868. Resident director of the American Academy in Rome from 1932 to 1935, he designed, among others, the Brooklyn Hospital, the Brooklyn Masonic Temple, St. John's Hospital in Brooklyn, and the Danbury, Conn., hospital. He was president of the Architectural League of New York from 1919 to 1921.

Higbee, Lenah Sutcliffe (Mrs.). American nurse leader, superintendent of the U.S. Navy Nursing Corps from 1908 to 1923, and during the World War directed the activity of some 500 nurses; received the Distinguished Service Medal for her work, died in Orlando, Fla., Jan. 10, 1941, born 1875.

Higgins, Frederick Robert. Irish poet; died in Dublin, Ireland, Jan. 8, 1941; born in Foxford, Co. Mayo, Ireland, Apr. 24, 1896. A frequent contributor to English, Irish, and American literary journals, he was managing director of the Abbey Theater in Dublin since 1937, and came to the United States (1937) with his Abbey company. He received the Aonach Taitteann Award for Poetry with his *Salt Air* (1924). Other poetic works include *Island Blood* (1925), *The Dark Breed* (1927), *Arable Holdings* (1933), and *The Gap of Brightness*.

Hilferding, Rudolf. German politician, Finance Minister of Germany in 1923 and 1928, reported to have committed suicide by hanging in prison in occupied France, September, 1941, born in Austria. A Socialist leader (of Jewish ancestry), he left Germany when Hitler became Chancellor (1933) and moved to Arles, France. After the fall of France, Dr Hilferding made arrangements to move to the United States and in February, 1941, obtained possession of the necessary papers for United States entry, but as he prepared to embark from Marseille the Gestapo intervened and he was handed over to German authorities.

Hill, Sir Arthur William. British botanist, assistant director of the Royal Botanical Gardens at Kew, England, from 1907 to 1922 and thereafter director; died in London, Eng., Nov. 3, 1941, born Oct. 11, 1875.

Hill, (John) B(oynton) P(hilip) Clayton. American general, lawyer, and ex-congressman; died in Washington, D.C., May 23, 1941, born in Annapolis, Md., May 2, 1879. He served as Republican Congressman from Maryland from 1921 to 1927, in 1924 attained national publicity when he was tried and acquitted on charges of illegal manufacture of wine and cider in his home. (The case established the legality of making home brew during prohibition.) He sought election to the U.S. Senate in 1926 and 1934, but was defeated both times.

Joining the National Guard (1904), he rose through the ranks, serving as lieutenant colonel during latter part of the World War and receiving the Distinguished Service Medal, the Croix de Guerre, and other honors. In 1935 he was promoted to brigadier general and named adjutant general of the State of Maryland. A contributor to many national magazines, he wrote *National Protection—Policy, Armament and Preparedness* (1916), and *The Federal Executive* (1916).

Hill, Robert Thomas. American geologist, principal geologist of the U.S. Geological Survey from 1886 to 1930; died in Dallas, Tex., July 28, 1941; born in Nashville, Tenn., Aug. 11, 1858.

Hills, Laurence. American newspaperman, chief

Paris correspondent of the New York *Herald* and New York *Sun*, 1920–24, and since 1924 editor-in-chief and general manager of the European edition of the New York *Herald Tribune*; died in Vichy, France, Mar. 28, 1941; born in New York, N.Y., July 29, 1879. The European edition of the *Tribune* went to press for the last time on June 12, 1940, two days before the German army occupied Paris.

Hiltman, John Wolfe. American publisher, vice-president and general manager of D. Appleton & Co. (1912–19), president (1919–33), and since 1933 chairman of the board; died in New York, N.Y., Apr. 15, 1941; born in Manchester, England, Feb. 27, 1862.

Hinckley, Robert. American portrait painter; died at Rehoboth Beach, Del., June 2, 1941; born in Boston, Mass., Apr. 3, 1853. A direct descendant of John Cotton and of Governors Simon Bradstreet, Thomas Dudley, and Thomas Hinckley of the Plymouth colony, he was a graduate of Ecole des Beaux Arts in Paris, and studied painting in the French capital for 17 years. He founded the Carolus Duran Studio and in it worked as a colleague of John Singer Sargent for many years. After his return to America he painted more than 350 portraits of prominent citizens and taught for several years at the Corcoran School in Washington. Among his better known works are *Alexander at Persepolis* and his painting of the first ether operation at the Medical Museum in Boston.

Hinds, Ernest. American general; died in San Antonio, Texas, June 17, 1941; born in Alabama, Apr. 18, 1864. A graduate of the U.S. Military Academy (1887), he served in the Philippines, and in the World War was made Chief of Artillery of the A.E.F., winning praise even from the Germans for his remarkable skill. In 1922 he was promoted to the rank of Major General. General Hinds held the Distinguished Service Medal, commander of the French Legion of Honor, and Belgian Order of Leopold. In civilian life, he was attorney, secretary-treasurer, and general manager of the United Services Automobile Association.

Hitchcock, Thomas. American sportsman; died near Old Westbury, L.I., Sept. 29, 1941; born on Nov. 12, 1860. A ten goal polo player in his day and a member of the first American international polo team in 1886, he was regarded as the greatest steeplechase trainer in the history of American turf. He was the father of Thomas Hitchcock, Jr., one of the country's outstanding polo players until his retirement in 1939.

Hobson, Robert Lockhart. British art expert; died at Horsham, Sussex, Eng., June 6, 1941; born July 26, 1872. Famed as an authority on Chinese pottery and porcelain, he was the author of the following standard works: *Catalogue of English Pottery* (1903), *Guide to English Pottery and Porcelain* (1904), *Catalogue of English Porcelain in the British Museum* (1905), *Worcester Porcelain* (1910), *Chinese Pottery and Porcelain* (1915), *The Wares of the Ming Dynasty* (1923), *The Later Ceramic Wares of China* (1925), and *Catalogue of the Eumorphopoulos Collection* (1925–28).

Holland, Charles Thurston. British radiologist, one of the original experimenters with X-rays, noted for his work with radiology in relation to bone fractures; died in Liverpool, Eng., Jan. 16, 1941; born in England. He was credited with perfecting the World War method of detecting bullets and shell fragments embedded in the bodies of patients.

Holland, Edward Everett. American Democratic Congressman from Virginia from 1911 to 1921; died in Suffolk, Va., Oct. 23, 1941; born in Nansemond Co., Va., Feb. 26, 1861. He had been presi-

dent of the Farmers Bank of Nansemond, Virginia, since 1892.

Holm, August. Danish industrialist; died in Copenhagen, Denmark, Oct. 14, 1941, born in 1882. He was a leading Danish business man, administration director of the Otto Monsted Margarine Works, chairman of the Federation of Industries, and president of the Danish exhibition at the New York World's Fair.

Holt, Sir Herbert S(amuel). Canadian financier; died in Montreal, Canada, Sept. 28, 1941; born in County Kildare, Ireland, Feb. 12, 1856. Canada's foremost financier, he was putatively one of the wealthiest men in the Dominion. Sir Herbert, with his associates, reputedly controlled 250 companies at different times with assets of more than \$2,000,000,000. In 1908 he became president of the Royal Bank of Canada. He was knighted by King George V in 1915 for his services in connection with railway problems during the World War.

Holt, Sir Richard Durning. British shipowner; died in Liverpool, Eng., Mar. 21, 1941; born in Liverpool, Nov. 13, 1868. Senior partner in Alfred Holt & Company, he had been chairman of the Elder Dempster Lines, Ltd., since 1932, and chairman of the Mersey Docks and Harbor Board (1927-41). He was a liberal member of Parliament from 1907 to 1918.

Hombert, Octave. French financier, died in Cannes, France, July 10, 1941; born in France. Former president of the Société Financière Française et Coloniale, director of the Banque de l'Indo-Chine, and Cie. Générale du Maroc, and president and member of several banking houses. He was a leader in the movement to stabilize the franc in the post-war period. An author of many financial and political books his works include *La France des cinq Parties du Monde* (1927), and *L'impérialisme américain* (1929).

Horgan, Stephen. American inventor of the half-tone engraving process in 1880, died in Orange, N.J., Aug. 30, 1941; born near Norfolk, Va., February, 1854.

Horn, Joseph V. American restaurant owner, co-founder of the chain of Automat restaurants; died in Philadelphia, Penn., Oct. 13, 1941; born in Philadelphia, 1861. At his death he was president of the Horn and Hardart Baking Co., of Philadelphia, and chairman of the board of the Horn and Hardart Co., New York. In his later years he had devoted his time to the Horn Foundation, which he established for philanthropic and educational purposes.

Houghton, Alanson Bigelow. American diplomat; died in South Dartmouth, Mass., Sept. 16, 1941; born in Cambridge, Mass., Oct. 10, 1863. He graduated from Harvard University in 1886; was president of the Corning Glass Works from 1910 to 1918 and since then chairman of the board; member of the U.S. House of Representatives (1919-23); resigned from the House to become Ambassador to Germany (1922-25); Ambassador to the Court of St. James's (1925-28); and was unsuccessful Republican candidate from New York for the U.S. Senate in 1928.

Known as the "businessman diplomat," he was said to be one of the most capable and most competent diplomats that the United States ever sent abroad.

Hovey, Otis Ellis. American civil engineer and bridge designer; died in New York, N.Y., Apr. 15, 1941; born in East Hardwick, Vt., Apr. 9, 1864. Graduating from Dartmouth College (1885) and from the Thayer School of Civil Engineering (1889), he became associated with George S. Morrison, consulting engineer of Chicago, as engineer of

design in the building of several bridges (1890-96). He served later as plant engineer of the Union Bridge Co. (1896-1900), and as engineer of design for the American Bridge Co. (1900-07), assistant chief engineer (1907-31). He retired in 1934. He was a director of the Engineering Foundation since 1937. The two-volume work *Movable Bridges* which he wrote in 1926-27 is a standard reference. He also published *Steel Dams* in 1935.

Howard, Cordelia (Mrs. Edmund J. MacDonald). American actress; died in Belmont, Mass., Aug. 10, 1941; born in Providence, R.I., Feb. 1, 1848. As the original Little Eva, who portrayed Harriet Beecher Stowe's character from *Uncle Tom's Cabin*, she was "the Shirley Temple of her day." On the night of Sept. 27, 1852, at Troy, New York, the first dramatization of the story was presented, and for the next eight years Cordelia Howard was the incarnation of Little Eva. The play was given before Abraham Lincoln in Washington, and in 1856 was successfully staged in London. Before she retired, at the age of 12, she had also appeared in *Dread of the Dismal Swamp*, *Fashion and Famine*, *A Page of History*, and *Oliver Twist*. The rest of her life was passed quietly.

Hoxie, Charles A. American engineer and inventor; died in Schenectady, N.Y., Oct. 13, 1941; born in Constable, N.Y., 1867. With the General Electric Co. from 1912 until his retirement in 1932, he invented the process which made possible the recording of the sound track directly on motion-picture films. This invention insured the synchronization of sound and picture, opening wide the possibilities of sound motion-pictures. In 1920 he developed a machine called the pallophotophone, which received transatlantic wireless messages (dot and dash) thirty times faster than skilful operators. He also devised the process of turning sound into light and recording it on a transparent film. This process eventually led to the Hoxie machine for recording sound on the same motion-picture film that carries the picture.

Hudspeth, C(laude) B. American Democratic Congressman from Texas (1919-31); died in San Antonio, Tex., Mar. 19, 1941; born in Medina, Bandera Co., Tex., May 12, 1877.

Huntziger, Charles Leon Clement. French army officer; died in an airplane crash at Le Vigan, France, on his return from Africa, Nov. 12, 1941; born in Lesenen, Brittany, France, June 25, 1880. Minister of War in the Pétain Cabinet since September, 1940, and Commander in Chief of the French land forces, he was the No. 3 man in the Vichy regime. General Huntziger had served with distinction in the French army since 1901. On June 22, 1940, he signed the French armistices with Germany and Italy.

Hymans, Paul. Belgian statesman; died in Nice, France, Mar. 9, 1941; born in Brussels, in 1865. A leader of Belgian liberals and an outstanding scholar, he was elected to the Chamber of Deputies (1900), and served as Ambassador to the Court of St. James's (1915-17); Minister of Economic Affairs (1917-18); Minister of Foreign Affairs, 1918-20, 1924-25, 1927-34, and November, 1934, to March, 1935; and since 1935 Minister without Portfolio. In 1920 he served as president of the League of Nations Assembly and in 1922 as president of the Council of the League. After the Belgian inquiry into war atrocities (1914) Hymans, with Emile Vandervelde, Socialist leader, came to the United States to place before President Wilson documents of their findings. He was a signer of the Treaty of Versailles. Among his books were: *Parliamentary History of Belgium*, *Modern Brussels*,

Trère Orban (2 vols. 1906–12) *Portraits, Essais et Discours* (1914), and *Pages Libérales* (1936).

Isaacs, Nathan. American educator; died in Cambridge, Mass., Dec. 18, 1941; born in Cincinnati, O., July 10, 1886. Receiving his degree from the Cincinnati Law School (1910), he taught at that institution during 1912–18. Dr. Isaacs served as a professor of law at the University of Pittsburgh (1920–23), becoming associated with Harvard University as a lecturer on business law in 1923–24, and thereafter professor of law. Dr. Isaacs had served as president of the Association for Jewish Culture and Education and the Menorah Educational Conference, and in 1936 was an American delegate at the first World Jewish Congress in Geneva. His publications include *The Law in Business Problems* (1921), *Course in Business Law* (1922), and *Study as a Mode of Worship* (1925).

Israel, Edward L. American rabbi; died in Cincinnati, O., Oct. 19, 1941; born in Cincinnati, Aug. 30, 1896. Rabbi of Har Sinai Congregation, Baltimore, from 1923 to 1941, he was a noted labor mediator and president of the Synagogue Council of America since September, 1940. In July, 1941, he was elected executive secretary of the Union of American Hebrew Congregations, and at his death was about to take over his new duties.

Jackson, Daniel Dana. American chemical engineer, head of the department of chemical engineering at Columbia University from 1918 to 1939; died in Mattituck, N.Y., Sept. 1, 1941; born in Gloucester, Mass., Aug. 1, 1870. He was an authority on water supply and sanitation problems.

Jackson, Frederick John Foakes. American clergyman and theologian; died in Englewood, N.J., Dec. 1, 1941; born in Ipswich, Eng., Aug. 10, 1855. Prepared for the Episcopal priesthood at Trinity College, Cambridge University, he was dean and assistant tutor at Jesus College, Cambridge, England, during 1895–1916, and professor of Christian institutions at the Union Theological Seminary, New York, from 1916 until his retirement in 1932. Dr. Jackson was the author of various works on theology, including *History of the Christian Church* (1891), *Biblical History of the Hebrews* (1903), *Introduction to Church History (590–1314)* (1921), *Studies in the Life of the Early Church* (1924), *The Church in England* (1931), *The Church in the Middle Ages* (1934), and *History of Church Historians* (1939).

Jameson, Andrew. British distiller and politician; died in Dublin, Feb. 15, 1941; born in Ireland, Aug. 17, 1855. Chairman of John Jameson & Son, Ltd., he served as governor of the Bank of Ireland from 1896 to 1898, and as Senator of the Irish Free State, 1922–36.

Janssen, Georges. Belgian banker, governor of the Belgian National Bank; died in Brussels, Belgium, June 17, 1941; born in 1893.

Jenson, Andrew. American Mormon historian; died in Salt Lake City, Utah, Nov. 18, 1941; born in Denmark, 1851. Assistant historian of the Latter-Day Saints Church since 1898, he compiled and edited 850 manuscript volumes of the history of the Mormon church, encompassing the period 1830 to 1900. His writings include a biography (1938), numerous books on church chronology, and several Danish and Norwegian books.

Johns, George Sibley. American newspaper editor; died in St. Louis, Mo., July 16, 1941; born in St. Charles, Mo., Dec. 27, 1857. Associated with the *St. Louis Post-Dispatch* since 1883 (except during 1898–99), he was successively dramatic critic, city editor, managing editor, editor-in-charge, and since 1899 editor of the editorial page; retired in 1929,

as editor emeritus. Among things successfully sponsored by *The Post-Dispatch* under his editorial leadership were reorganization of the local public school system, construction of a lake in Forest Park by public subscription, the raising of \$83,000,000 in bonds for public improvements and general beautification of St. Louis, and general exposure of graft and corruption.

Johnson, Amy. See MOLLISON, AMY JOHNSON.

Johnson, Howard E. American lyric song writer of *When the Moon Comes Over the Mountain, Ireland Must Be Heaven, Oh, Those Sunday Drivers, What Do You Want to Make Those Eyes at Me For?, M-o-t-h-e-r, There's a Broken Heart for Every Light on Broadway, Where Do We Go From Here*, an early World War song, and *Dew, Dew, Dewy Day*; died in New York, N.Y., May 1, 1941; born in Waterbury, Conn., 1888. A few months before his death, he wrote *If They Feel Like a War, Let Them Keep It Over There*, sung over the radio by Eddie Cantor.

Jones, Howard H(arding). American football coach; died in North Hollywood, Calif., July 27, 1941; born in Excello, O., Aug. 23, 1885. Graduating from Yale University in 1908, he became head football coach at Syracuse University (1908), Yale (1909), Ohio State University (1910–11), Yale (1913–15), University of Iowa (1916–23), Duke University (1924), and University of Southern California since 1925. At Southern California he assured himself lasting renown as the leader of the mighty Trojan teams, which won or tied for the Pacific Coast Conference crown 8 years out of 16. He took five Trojan teams into the Rose Bowl games and won them all—an achievement never before accomplished. Eleven of the 20 players that received All-American rating under his coaching were men of Troy (Trojans).

Jones, John (Jack) Joseph. British politician; died in Essex, Eng., Nov. 21, 1941; born at Nenagh, Tipperary, Eng., Dec. 8, 1873. He was a Labor Member of Parliament from 1918 to 1940.

Jones, Paul. American pacifist; Episcopalian bishop; died at Yellow Springs, O., Sept. 4, 1941; born in Wilkes-Barre, Pa., Nov. 24, 1880. Ordained a priest in the Protestant Episcopal Church in 1906 he served as Episcopal Bishop of Utah from 1914 to 1918, when he resigned because of his pacifist viewpoint. Since 1930 he had been pastor and associate professor of religion at Antioch College, and at his death was chairman of the National Episcopal Committee on European Refugees, of the Ohio Christian Committee on Conscientious Objectors, and of the Fifth Province Episcopal Pacifist Fellowship.

Joyce, James. Irish author, died in Zurich, Switzerland, Jan. 13, 1941; born in Dublin, Ireland, Feb. 2, 1882. He left Ireland when he was 20 and went to Paris to study medicine, but soon after turned to writing and teaching. In 1922 he published the book *Ulysses*, which became the center of one of the most bitter literary controversies of modern times. Its author was evaluated in many ways by many critics from Edmund Wilson's appraisal of him as a great innovator of literature whose influence upon other writers of his time is immeasurable to that of Irving Babbitt who thought that the book could have been written "only in an advanced stage of psychic disintegration." It was not until 1933 that *Ulysses* could be legally bought in the United States, for until then it had been banned as obscene. His other works were: *Dubliners* (1914), *Portrait of the Artist as a Young Man* (1916), *Finnegans Wake* (1939), and *Collected Poems*.

Just, Ernest Everett. American Negro zoologist and educator; died in Washington, D.C., Oct. 28, 1941; born in Charleston, S.C., Aug. 14, 1888. Graduated from Dartmouth College (1907), he became an instructor in zoology at Howard University, Washington, D.C., and since 1912 was professor of zoology and head of the department at the university. The recipient of international recognition through his researches in the biology of the cell, Dr. Just was a factor in improving the standard of the Negro medical schools, and, as a tribute to his work, received in 1915 the Spingarn Medal, awarded annually to "the man or woman of African descent and American citizenship who shall have made the highest achievement during the preceding year, or years, in any honorable field of human endeavor."

Kagey, Charles L. American lawyer and diplomat; died in Wichita, Kan., Oct. 13, 1941; born in New Market, Va., Dec. 22, 1876. He was United States Minister to Finland from October, 1921, to May, 1925.

Kahn, Gus. American song writer; died in Beverly Hills, Calif., Oct. 8, 1941; born in Germany, 1886. One of the better known American lyric writers, he wrote such famous songs as *My Blue Heaven*, *Carolina in the Morning*, *Mammy*, *One Night of Love*, and *Memories*. The screen musicals to which he contributed include *Whoopie*, *Kid Milhons*, *Naughty Marietta*, *Rose-Marie*, *San Francisco*, *Lillian Russell*, *Bitter Sweet*, and *The Firefly*.

Kašpar, Karel. Czechoslovak ecclesiastic, died in Prague, Czechoslovakia, Apr. 21, 1941; born in Mirosov, Bohemia, May 16, 1870. Raised to the Sacred College of Cardinals in 1935, he was Titular Bishop of Bethsaida (1920); Bishop of Králové Hrádek (1921-31); and Archbishop of Prague since 1931. He visited the United States (1926) to attend the Chicago Eucharistic Congress.

Kast, Ludwig. American medical scientist; died in New York, N.Y., Aug. 14, 1941; born in Vienna, Austria, Mar. 2, 1877. Receiving his medical education in several European universities, he came to the United States in 1906. In 1907 he joined the staff of the New York Post-Graduate Medical School and Hospital, became a full professor in 1914 and since then had continued as an active trustee of the school, specializing in teaching and research in internal medicine and education. In 1928 he organized a philanthropic institution for medical research, which became in 1930 the Josiah Macy Jr. Foundation, with an original grant of \$5,000,000. Dr. Kast, president of the institution since its founding, had seen the organization appropriate nearly \$2,000,000 for medical research. From 1909 to 1914 he was secretary of the national committee of the United States of the International Committee on Post-Graduate Medical Education.

Kawai, Misao. Japanese statesman; died in Japan, Oct. 13, 1941; born in Oita-ken, Japan, September, 1864. A graduate of the Japan Military Academy and Military Staff College, he was Supreme War Councillor in 1921. Since 1927 he had been a member of the Japanese privy council, and as such had helped negotiate Japan's entry into the Rome-Berlin-Tokio axis. He was also a member of the council's special committee which deliberated the Japanese-French Indo-China treaty, giving Japan concessions in the east Asian colony.

Kean, Hamilton Fish. American Republican Senator from New Jersey (1929-35); died in New York City, Dec. 27, 1941; born in Ursino Union Twp., Union Co., N.J., Feb. 27, 1862. Senator Kean had been a banker and politician in New Jersey for nearly half a century.

Keene, Foxhall Parker. American sportsman; died

at Ayre's Cliff, P.Q., Canada, Sept. 25, 1941; born in San Francisco, California. One of the greatest polo players in the history of the game, he rated a 10 goal handicap (highest in the game) for fourteen years between 1891 and 1920. After attending Harvard University, he became associated with his father in sporting affairs, and for over a quarter of a century, starting in the late Nineties, James R. Keene and son completely dominated horse racing in the United States and England.

Kendall, William Mitchell. American architect; died in Bar Harbor, Me., Aug. 8, 1941; born in Jamaica Plain, Mass., Feb. 13, 1856. Associated with the architectural firm of McKim, Mead & White since 1882 and member since 1906, he designed the following prominent buildings: American Academy in Rome, New York Municipal Building and General Postoffice; Columbia University Library, New York; Knickerbocker Trust Company, New York; J. P. Morgan Library, New York; Arlington Memorial Bridge, Washington, McKinley Memorial, Niles, Ohio; Butler Art Gallery, Youngstown, Ohio, and Savoy Plaza Hotel, New York.

Kerri, Hanns. German politician, Minister of Religious Affairs since 1935; died in Berlin, Germany, December, 1941; born in Fallersleben, Prussia, December, 1887. High in Nazi circles from the time of Adolf Hitler's beer-hall putsch in 1923, Dr. Kerri was appointed Minister of Justice when Hitler rose to the seat of power (1933). During 1934-35 he served as Minister without Portfolio. As Minister for Church Affairs he led the efforts of the Nazis to gain full State control of the church.

Ketcham, John C(lark). American Republican Congressman from Michigan from 1921 to 1933; died in Hastings, Mich., Dec. 4, 1941; born in Toledo, O., Jan. 1, 1873.

Kidd, Isaac Campbell. American admiral, chief of staff, and aide commander of battleships of the battle force since February, 1940; killed in action during the Japanese attack on Pearl Harbor, Hawaii, Dec. 7, 1941; born in Cleveland, O., Mar. 26, 1884. Admiral Kidd had served as captain of the Port of Cristobal in the Canal Zone, as chief of staff of the command base force, as head of the officer detail section in the Bureau of Navigation, and as commander of Destroyer Squadron One, scouting force, during 1935-36. His last assignment before joining the battle force of the Pacific Fleet was commanding officer of the *Arizona*. At the time of his death Admiral Kidd was in command of a battleship division of the Pacific Fleet.

Kienzl, Wilhelm. Austrian composer; died in Vienna, Austria, Oct. 3, 1941, born in Wazzenkirchen, Upper Austria, Jan. 17, 1857. In his youth he was a friend of Franz Liszt and Richard Wagner. He was best known in the United States for his opera *Der Kuhreigen* (presented in New York and Chicago in 1913), and for *Der Evangelimann*, a folk opera which gained wide popularity in Germany and Austria. His other operas include *Urvast*, *Heilmar*, *Don Quixote*, *Knecht Ruprecht*, *Das Testament*, and *Hassan der Schwarmer*. He was the author of *Meine Lebenswanderung*, a biography.

Kiest, Edwin J(ohn). American newspaper publisher; died in Dallas, Tex., Aug. 11, 1941; born in Cook Co., Ill., Sept. 24, 1861. A charter member of the Associated Press, he had been owner and publisher of *The Dallas Times-Herald* since 1896.

Kilmer, Aline Murray (Mrs. Joyce Kilmer). American author; died in Stillwater, N.J., Oct. 1, 1941; born in Norfolk, Va., Aug. 1, 1888. Poet, essayist, and writer of children's stories, she was the author of six volumes of poems and essays, including *Candles That Burn* (1919), *Vigils* (1921), *The Poor*

King's Daughter (1925), and *Selected Poems* (1929). Mrs. Kilmer was the widow of Sergeant Joyce Kilmer, the soldier-poet who wrote *Trees*, and was killed in action in World War I.

Kinnear, Wilson Sherman. American civil engineer; died in Grosse Pointe, Mich., Aug. 8, 1941; born in Circleville, O., May 25, 1864. While assistant general manager of the Michigan Central Railroad (1910), he became nationally known for his construction of the firm's tunnel between Detroit and Windsor, Canada. Nearly 2 miles in length, it has the largest cross-sectional area of any sub-aqueous tunnel in the world. The method employed marked an epoch in engineering history, tending to revolutionize sub-aqueous construction. The work required three years to complete.

Kittredge, George Lyman. American educator; died in Barnstable, Mass., July 23, 1941; born in Boston, Mass., Feb. 28, 1860. Graduated from Harvard University in 1882, he taught Latin the next six years at Phillips Exeter Academy. He returned to Harvard as an instructor in English (1888-90), assistant professor (1890-94), and was then appointed to his professor's chair, where he remained until his retirement in 1936.

An outstanding authority on Beowulf, Chaucer, and Shakespeare, especially the latter, his "English 2" was perhaps the most difficult elective on the curriculum. Lewis Nichols, in *The New York Times*, in 1936, said of it: "It is hard, it is a series of mathematical equations based on six plays, but if you are weak and lack character, you can escape after mid-year's. Few ever did, save by invitation of the proprietor, for the Piper plays brilliantly right to the edge of the little blue books (in which examinations are written). Then comes two score or more lines with the terse commands: 'Indicate context,' 'Summarize briefly,' or, more unreasonable still, 'Quote remainder of speech.' The books come back, bathed in red ink and trembling with neuroses." Professor Kittredge was never known to be late for a lecture, never permitted anyone to cough in his classes, and carried a cane with which, in the Widener Library, he knocked off the hat of anyone so unwise as to persist in wearing one. Possessing a tall, angular frame, topped by a bushy, white beard, with a cigar invariably moving somewhere within the foliage, he was a legend when it came to traffic, for he simply held out his hand and walked on, amid the squealing of brakes and raucous honking of horns.

He was the author or co-author of 13 books, many of them used as text-books in the leading educational institutions of the world, among them *The Language of Chaucer's Trailus* (1894), *Words and Their Ways in English Speech* (with J. B. Greenough, 1901), *Old Farmer and His Almanac* (1905), *Chaucer and His Poetry* (1915), *Shakespeare* (1916), *Sir Thomas Malory* (1925), *Dr. Robert Child, the Remonstrant* (1919), and *Witchcraft in Old and New England* (1929).

Kneeland, Elbert W. Canadian industrialist, former president of the Winnipeg Grain Exchange; member of the Montreal Stock Exchange; and president and director of the Kneeland Grain Company; died in Montreal, Can., May 20, 1941; born in Bolton, Que., in 1871.

Koch, Theodore Wesley. American librarian; died, Evanston, Ill., Mar. 23, 1941; born in Philadelphia, Aug. 4, 1871. Librarian at the University of Michigan from 1905 to 1916, and since 1919 librarian at Northwestern University, he was the author of more than twenty books on library work. He was president of the American Library Institute during 1930-32.

Koffka, Kurt. German-American psychologist and educator; died in Northampton, Mass., Nov. 22, 1941; born in Berlin, Germany, Mar. 18, 1886. One of the scientists credited with the modern development of the Gestalt theory of psychology, he was visiting professor at Cornell University, 1924-25, professor of psychology at the University of Wisconsin, 1926-27, William Allan Neilson research professor at Smith College, 1927-32, and since 1932 professor of psychology at that college. His publications include *Zur Analyse der Vorstellungen und Ihrer Gesetze* (1912), *Die Grundlagen der psychischen Entwicklung* (1921), and *Principles of Gestalt Psychology* (1935).

Korizis, Alexander. Greek politician; died in Athens, Apr. 18, 1941; born on the island of Poros, near Salonica, in 1885. Long known for his keen knowledge of the affairs of his country, he became Premier of Greece on Jan. 29, 1941, upon the death of his intimate friend, Premier Gen. John Metaxas. Although not a military man, he pledged himself to carry on the war policies of General Metaxas. During his short tenure as Premier—80 days—he was in constant consultation with British and Greek leaders, and led a strenuous existence, contributing to his physical downfall. Prior to his Premiership he had been associated with the National Bank of Greece since 1903, becoming vice-governor in 1929.

Krause, Allen Kramer. American physician; died in Providence, R.I., May 12, 1941, born in Lebanon, Pa., Feb. 13, 1881. He graduated from Brown University (1901), received his medical degree from Johns Hopkins University in 1907, and for the next two years taught there. He returned to Johns Hopkins as an associate professor of medicine (1916-29); was president of the Desert Sanatorium (Arizona), 1929-37, and, in addition, was clinical professor of medicine at Stanford University (1929-37) and of the University of Southern California (1932-37). Prominent in the study of the pathology of tuberculosis, he was appointed managing editor of *The American Review of Tuberculosis* in 1916, became editor in 1922, remaining at that post until he retired, 1939. His publications included: *Rest and Other Things* (1922), *Environment and Resistance in Tuberculosis* (1923), *The Evolution of Tubercle* (1927), and numerous articles on tuberculosis.

Krencher, Daniel. German architect and archaeologist, died in Berlin, Germany, Nov. 13, 1941; born, 1874. A member of archaeological expeditions to Baalbeck, Syria, 1900-04, Aksum, Ethiopia, 1905-06, and Boghaskoi (Asia Minor), 1907, he was director of the excavation of Roman ruins near Trier, Germany, during 1912-14 and 1919-21. He also served as director of excavations in Angora in 1926 and 1928, and in Kalât Simân during 1938. Dr. Krencher served as a professor of historical architecture in the Berlin Technical High School in 1922, Rector, 1930-31. His works include *Boghaskoi* (1912), *Deutsche Aksumexpedition* (1913), *Baalbek* (1921-26), *Palmyra* (1932), *Stelen von Aksum* (1935), and *Römische Tempel in Syrien* (1938).

Kriebel, Hermann. German officer and Hitler aide, died in Munich, Germany, Feb. 17, 1941; born in Germany in 1876. Since 1938, chief of the personnel department of the German Foreign Office, he marched at Adolf Hitler's side in the beer cellar putsch of 1923 and was sentenced, with Hitler, to a jail term. It was Kriebel who bade farewell to the Allied Armistice Commission in June, 1919, with the words, "See you again in 20 years."

Kurt (-Derf), Melanie. German ex-opera singer; she

was the leading Wagnerian soprano at the Metropolitan Opera House from 1914 to 1917; died in New York, N.Y., Mar. 11, 1941; born in Vienna, Germany, 1879.

Labriolle, Pierre de. French literary historian, professor of Roman Literature at the Sorbonne since 1926, and author of several publications, including *La Crise Montaniste* (1913), *Histoire de la littérature latine chrétienne* (1920-26), and *La Réaction Paenne* (1935); died in Nantes, France, Jan. 15, 1941; born, 1874.

Ladd, William Palmer. American Protestant Episcopal priest and educator, dean of the Berkeley Divinity School at Yale University since 1918; died in New Haven, Conn., July 1, 1941; born in Lancaster, N.H., May 13, 1870. President of the American Theological Society in 1928, his publications include *A Guide to Christian Living* (1939) and *Prayer Book Interleaves*.

Laffoon, Ruby. American ex-governor; died in Madisonville, Ky., Mar. 1, 1941; born in Madisonville, Jan. 15, 1869. Elected Democratic Governor (1931-35) by the largest majority ever accorded a Kentucky governor, he attained nation-wide publicity by creating approximately 5,000 Kentucky colonels. Upon leaving office, he resumed his law practice.

Lagergren, Carl Gustaf. Swedish-American theologian; died in St. Paul, Minn., Oct. 27, 1941; born in Ostersund, Sweden, June, 21, 1846. A prominent pastor in Sweden, he came to the United States in 1889. From 1892 to 1914 he was the dean of the Swedish Baptist Seminary at the University of Chicago and professor of systematic theology. In 1931 the seminary was moved from Chicago to St. Paul and Dr. Lagergren also removed there to continue as head of the institution. He retired as dean emeritus in 1921. An authority on Swedish Baptist history and contributor to Swedish newspapers in America, he was the author of religious works, including *Strödda Tankar* (1872), *Om Små Barns dop* (1874), *Nytt och gammalt* (1894), *Den Kristna församlingen* (1908), and *På upp eller nedgående* (1915).

Lamberton, Robert Eneas. American judge of the Court of Common Pleas of Philadelphia County (1931-39) and mayor of Philadelphia since November, 1940; died in Longport, N.J., Aug. 22, 1941; born in South Bethlehem, Pa., Sept. 14, 1886.

Lampport, Samuel C. American textile merchant; died in New Rochelle, N.Y., Sept. 13, 1941; born in Marienpol, Poland, Apr. 1, 1880. One of the most widely known cotton merchants in the United States, he was president of the Lampport Company, Inc., for forty years. He represented the United States at Geneva in 1927 at the Conference Economique International, and in the same year made a survey of the Near East as a possible market for American textiles. In 1929 he visited Russia as a representative of the American Textile Institute to promote trade agreements between Russia and the United States. He was widely known as a contributor to Jewish philanthropic and educational institutions.

Landrith, Ira. American clergyman and educator; died in Los Angeles, Calif., Oct. 11, 1941; born in Milford, Tex., Mar. 23, 1865. President of Belmont College, Nashville, Tenn., from 1904 to 1912, he had been a prominent Presbyterian minister and prohibition leader. In 1916 he was the Prohibition candidate for the Vice Presidency of the United States. In 1906, as moderator of the last general assembly of the Cumberland Presbyterian Church, he assisted in the merger of that denomination

with the Presbyterian Church in the United States.

Lane, Gertrude Battles. American editor; died in New York, N.Y., Sept. 25, 1941; born in Saco, Me. Associated with *The Woman's Home Companion* as assistant editor during 1903-12 and editor since 1912, she was considered one of the foremost, if not the most prominent, woman in the magazine publishing field. During her editorship the circulation of the magazine grew from 738,000 monthly to more than 3,500,000. A main part of the growth was credited directly to the editorial policies of Miss Lane. A vice-president and director of Crowell-Collier Publishing Company, she was an advisor to the editors of *Collier's*, *The American Magazine*, and *Country Home*. During the World War (1917-18) Miss Lane served on the Washington staff of the U.S. Food Administration. Later, during Hoover's presidency, she was a member of the White House Conference on Child Health and Protection, and a member of the planning committee of the White House Conference on Home Building and Home Ownership.

Langmuir, Arthur (Comings). American research chemist; died at Hasting-on-Hudson, N.Y., May 14, 1941; born in Evanston, Ill., 1872. World authority on shellac and glycerine, he instituted and financed the American Chemical Society's \$1,000 annual award for young research chemists working in American universities. From 1900 to 1920 he was chief chemist and superintendent of Marx & Rawolle, Brooklyn, N.Y., glycerine and shellac manufacturers. Since then he had been a research and consulting chemist. Dr. Langmuir was chairman of the American Chemical Society Commission to London in 1910.

Laning, Harris. American naval officer; died in Philadelphia, Pa., Feb. 2, 1941; born in Petersburg, Ill., Oct. 18, 1873. Graduating from the U.S. Naval Academy in 1895, he rose through the ranks until, immediately after the World War, he was appointed acting chief of the Bureau of Navigation. Admiral Laning was made a rear admiral in 1925 and received a vice admiral's rank in 1933, and as such became commander of the cruisers of the fleet. From 1935 to 1936 he was commander of the fleet force. He retired in 1937. Among his decorations was the Distinguished Service Medal. In private life, after retirement, he was governor of the United States Naval Home in Philadelphia, Pa.

Lanman, Charles Rockwell. American educator and authority on Oriental literature and culture; died in Boston, Mass., Feb. 20, 1941; born in Norwich, Conn., July 8, 1850. He graduated from Yale University (1871), and in 1876 was engaged to teach at Johns Hopkins University, which had just opened. He joined the Harvard faculty (1880) as a full professor and introduced the study of Sanskrit; went to India (1889) and continued his research into Sanskrit, returning after a year with many valuable manuscripts; became professor emeritus (1926), having taught at Harvard for 46 years. His most eminent work, as a writer, was the standard 38 volume *Harvard Oriental Series*. Other works were: *Noun-Inflection in the Veda* (1880), *Sanskrit Reader, Vocabulary, Notes*, 8 issues (1884-1927), and *Beginnings of Hindu Pantheism* (1890). Parenthetically, he was an able sculler and had rowed up and down the Charles River for a total of nearly 12,000 miles.

Lapointe, Ernest. Canadian politician; died in Montreal, Canada, Nov. 26, 1941; born in St. Eloi, Quebec, Canada, Oct. 6, 1876. He had served as a member of the House of Commons since 1904; as Minister of Marine and Fisheries (1921); Min-

ister of Justice during 1924-30 and since 1935; and Attorney General since 1935.

A close friend of Premier King and his associate in the Cabinet, he was regarded by many as being a second Prime Minister. He was one of Canada's representatives at the Imperial Conference in London, 1926, represented Canada several times at the Assembly of the League of Nations, and was a representative again at the dedication of the Vimy Ridge Memorial in France, 1936. In 1937 he was made a member of the Privy Council of the United Kingdom, as a tribute to his services for the British empire.

Lasker, Emanuel. German chess champion, holder of the world's title from 1894 to 1921; died in New York, N.Y., Jan. 11, 1941; born in Berlin, Ger., Dec. 24, 1868.

Laughlin, Clara E(lizabeth). American author of at least forty books, including novels, travel books and biographies, she was best known for the travel-book series *So You're Going To—*, and the novel *Felicity*; died in Chicago, Mar. 3, 1941; born in New York, N.Y.

Laughlin, Irwin (Boyle). American diplomat; died in Washington, D.C., Apr. 18, 1941; born in Pittsburgh, Pa., Apr. 26, 1871. Holding numerous diplomatic posts from 1905 to 1919, he became Envoy Extraordinary and Minister Plenipotentiary to Greece (1924-26) and Ambassador to Spain (1929-33). From 1923 to 1935 he was a United States representative of the International Commission for the Advancement of Peace between the United States and Denmark.

Lauri, Lozenzo Cardinal. Italian Roman Catholic prelate, died in Vatican City, Rome, Italy, Oct. 8, 1941; born in Rome, Oct. 15, 1864. Ordained in the church in 1887, he was elected to the vigilance council of the diocese of Rome in 1897, and in 1901 was appointed canon of the Basilica of San Lorenzo in Damascus. Cardinal Lauri served as a diplomatic representative of the Vatican in Peru, Spain, and Poland, where he served as Papal nuncio during 1921-27 and consummated a concordat allowing for the reorganization of the dioceses in territories acquired by Poland after the World War. He was made a cardinal in 1927, and since 1939 had been Camerlengo (Chamberlain) of the Holy Roman Church, the highest administrative office in the church under the sovereign Pontiff.

Lavery, Sir John. British artist; died in County Kilkenny, Eire, Jan. 10, 1941; born in Belfast, Northern Ireland, March, 1856. In 1896 he helped Whistler found the International Society of Sculptors, Painters and Gravers; knighted (1918); elected a Royal Academician (1921), and president of the Royal Society of Portrait Painters since 1932. He was a member of the academies of Antwerp, Milan, Brussels, and Stockholm, the Societe Nationale des Beaux-Arts of Paris, and of Berlin, Vienna, Munich, and Spanish institutions. Sir John was considered to have painted more portraits of American millionaires than any other artist. He had pictures in many public galleries in Europe and America. His autobiography *The Life of a Painter* was published last year.

Lavranga, Denys (Dionigi). Greek musician and composer; died at Cefalonia, Greece, July 30, 1941; born in Argostoli, Cefalonia, 1864. Founder and director of the Athens National Opera since 1899, he was considered the creator of modern Greek opera. His musical tragedy *Didon*, performed in Athens in 1909, was the first Greek opera of magnitude, although his later operas, *Les Deux Frères* and *La Sorcière*, and his symphonical works,

Suites Grecques and *Ouverture Grecque*, possess a more heavily designed national color.

Lawrence, William. American Protestant Episcopal Bishop of Massachusetts from 1893 to 1926; died in Boston, Mass., Nov. 6, 1941; born in Boston, May 30, 1850. Ordained a priest in 1875 and consecrated a Bishop in 1893, he attained his most notable achievement with the establishment of the Church Pension Fund, which provided old-age pensions for retired Episcopal clergymen. The fund began in 1916 and when Bishop Lawrence retired as head in 1931, the funds had increased to \$30,000,000. He served as professor of homiletics and pastoral theology at the Episcopal Theological School, Cambridge, from 1884 to 1893, becoming dean of the institution in 1888, a post he held until his elevation to the episcopacy. His publications include *The Life of Amos Lawrence* (1889), *Visions of Service* (1896), *Life of Roger Wolcott, Governor of Massachusetts* (1902), *The American Cathedral* (1921), *Fifty Years: Memories of a Happy Life* (1926), and *The Life of Phillips Brooks* (1930).

Lawton, William Cranston. American educator and author; died in Philadelphia, Pa., Apr. 18, 1941; born in New Bedford, Mass., May 22, 1853. A graduate of Harvard in 1873, he held various professorships before retiring (1918) as professor emeritus in literature at Hobart College. During the last decade, although he had lost his eyesight, he, with his wife, published three translations of German works. He was the author of many books, among which were: *Three Dramas of Euripides* (1889), *Art and Humanity in Honor* (1896), *New England Poets* (1898), *Successors of Homer* (1898), *Introduction to American Literature* (1902), *The Soul of the (Greek) Anthology* (1923). Many poems he wrote were published under the title *Folia Dispersa*.

Lazarovich-Hrebilianovich, Prince Eugene Lazar. Serbian prince, descendant of the last czar of Serbia; died in Heidelberg, Germany, July 15, 1941; born in Zagreb, Croatia, 1870. Preparing for a military career, he graduated from the Imperial War College in Vienna and was assigned to the Austrian general staff. In 1894 he resigned his commission and devoted himself to the liberation of Serbia from Austria and Turkey and thereafter was active in Serbian freedom and acquainting the rest of the world with Serbia. He collaborated in a two volume work *The Serbian People—Their Past Glory and Their Destiny* (1910), and was the author of *The Orient Question* and other books and articles. In 1912 he visited the United States and lectured at Stanford University.

Lebesgue, Henri. French mathematician; died in France, August (?), 1941; born in Beauvais, France, 1875. Professor at the University of Paris (1910-21) and at the College de France since 1921, he had been a member of the French Academy of Sciences since 1922. Among his publications are *Leçons sur l'intégration et la recherche des fonctions primitives*, *Les fonctions sommables*, and *Leçons sur les séries trigonométriques*.

Leblanc, Maurice. French author; died in Perpignan, France, Nov. 7, 1941; born in Rouen, France, 1864. Pioneer of the detective novel in France, he was the creator of the noted Arsène Lupin, gentleman crook. His publications include *Arsène Lupin, Gentleman Cambrioleur* (1907), *Arsène Lupin contre Sherlock Holmes* (1908), *Les heures de mystère*, *Le bouchon de cristal*, *Le triangle d'or*, *Les trois crimes d'Arsène Lupin*, *La demoiselle aux yeux verts*, and *Les dents du tigre*.

Lee, Auriol. American actress and producer; died

near Hutchinson, Kan., July 2, 1941; born in London, Eng., Sept. 13, 1880. One of the theater's few women directors, she made her debut, as an actress, in London in 1900 and after a long career, in which she appeared in many distinguished casts and plays, she turned to stage directing in the late 1920's. Broadway plays staged by her include the successes *The Distaff Side*, *There's Always Juliet*, and *Old Acquaintance*, which appeared in December, 1940.

Lees-Smith, Hastings Bertrand. British politician, acting chairman of the Parliamentary Labor party, and leader of the Opposition; died in London, Eng., Dec. 18, 1941; born in India, 1878. He was a Labor member of Parliament during 1910-18, 1922-31, and since 1935. In 1929-31 he was Postmaster General, and also (1931) president of the Board of Education. His published works include *Studies in Indian Economics* (1909), *Second Chambers in Theory and Practice* (1923), and *Guide to Parliamentary Papers* (1924).

Leicester, 3rd Earl, Thomas William Coke. British army officer and land owner; died in Norfolk, Eng., Nov. 19, 1941; born, July 20, 1848. Noted big game hunter and a veteran of the Egyptian campaign, the Suakim expedition, and the Boer War, he was Lord Lieutenant of Norfolk during 1906-29. Lord Leicester was the owner of approximately 40,000 acres of land.

Leonard, Eddie (Lemuel Gordon Teney). American minstrel; died in New York, N.Y., July 29, 1941; born in Richmond, Va., October, 1875. One of the last and best of minstrel men, he was a vaudeville star from 1905 until vaudeville faded out in the late 1920's. He was the composer of *Ida*, who was "sweet as apple cider," *Don't Do Nothin' for Nobody That Won't Do Nothin' for You*, *Roly-Boly Eyes*, *Big Brown Booloo Eyes*, and many others. He appeared in motion pictures and starred in the *Melody Man* and *Rainbow's End*. His last part in pictures was a specialty act in *If I Had My Way* (1940). He was the author of one book *What a Life: I'm Telling You*, an autobiography (1935).

Le Tellier, Pol. Belgian diplomat; died in Vichy, France, Aug. 3, 1941; born in Belgium. He served as counselor of the Belgian embassy in London (1920-26); director general, political department of Foreign Affairs in Brussels (1927-35); Ambassador to Russia (1935-37); and Ambassador to France (1939-40).

Levinson, Samuel Oliver. American lawyer and peace advocate; died in Chicago, Ill., Feb. 2, 1941; born in Noblesville, Ind., Dec. 29, 1865. Internationally known attorney and sponsor of the Kellogg-Briand Peace Pact (1928), he was an idealist, believing that war could be avoided by simple and honest appeals to reason. He founded the American Committee for the Outlawry of War, and in 1925 urged United States entry into the World Court. In 1927 he went to Europe to work for peace. He established the William E. Borah Outlawry of War Foundation, with a grant of \$55,000, at the University of Idaho (1927), and gave the University of Chicago 50,000 documents showing the growth of his idea outlawing war (1937); a second batch, nearly as large, was given in 1939.

Levitzi, Mischa. American pianist and composer; died at Avon-By-The-Sea, N.J., Jan. 2, 1941; born in Kremenchurg, Russia, May 25, 1898. A child prodigy in Europe, he established his reputation as an artist in the United States when he appeared in concert in New York City in 1916; all the leading symphonic orchestras bid for his services. His compositions for the piano are ranked highly. He toured the United States many times, and Aus-

tralia and New Zealand (1921; 1931), and the Orient in 1925.

Lewis, Dean (De Witt). American educator and surgeon; died in Baltimore, Md., Oct. 9, 1941; born in Kewanee, Ill., Aug. 11, 1874. Associated with Rush Medical College (1900-24), he was professor of surgery at Johns Hopkins University and surgeon in chief of Johns Hopkins Hospital from 1925 to 1939, retiring as professor emeritus of surgery. Dr. Lewis made valuable contributions to the knowledge of acromegaly and also discovered the so-called "cable transplant," a means of joining two severed ends of a nerve whose intervening section of tissue is destroyed. In 1933 and 1934 he was president of the American Medical Association.

Lewis, Mary Sybil (Mrs. Robert L. Hague). American opera singer, star for the Metropolitan Opera Co. in the 1920's; died in New York City, Dec. 31, 1941; born in Hot Springs, Ark., Jan. 7, 1900. Coming to the Metropolitan by way of the *Greenwich Village Follies* and the *Ziegfeld Follies*, she won acclaim in Europe as well as in the United States. Her repertoire included the leading feminine roles in *Faust*, *La Bohème*, *Carmen*, *Rigoletto*, *Le Coq d'Or*, *Manon*, *Thais*, and *Louise*.

Liang, M. T. Chinese statesman; died in Tientsin, China, Oct. 14, 1941, born in China, 1860. He was Foreign Minister of China in 1912. In 1921 he was high adviser to the Chinese delegation to the Washington conference on limitation of armaments. He served as chairman of the China International Famine Relief Commission from 1923 to 1931.

Lieberman, Herman. Polish politician, Minister of Justice of the Polish Government in Exile since September, 1941; died in London, Eng., Oct. 21, 1941; born in Austrian Poland, 1870. An outstanding lawyer and orator, and a leader of the Polish Socialist party, he became a member of the Polish Parliament after the World War, serving until 1932. An extreme advocate for the cause of Polish liberty, his attacks on Pilsudski's dictatorship in 1931 brought about his incarceration after the Brest-Litovsk trials.

Liverpool, 5th Earl of, Arthur William de Brito Savile Foljambe. British colonial administrator, Governor of New Zealand (1912-17) and Governor General (1917-20); died in Lincoln, Eng., May 15, 1941; born May 27, 1870.

Llewellyn, Sir William. British artist; died in London, Eng., Jan. 29, 1941; born in Gloucester, Eng., in 1864. Outstanding as a figure in English art, perhaps his best known works were studies of King George V and Queen Mary (1910), which have been copied many times for other galleries. He was elected an associate of the Royal Academy (1912); knighted (1918); Royal Academician (1920); president of the Royal Academy (1928-38); and trustee of the National Gallery (1933-40). Sir William was conservative in his painting, and his works have often been summarized as "thoroughly conservative and decorous."

Lloyd, 1st Baron, of Dolobran, George Ambrose. British diplomat; died in London Feb. 5, 1941; born in Montgomeryshire, Wales, Sept. 19, 1879. A strong supporter of Winston Churchill's policies, he served as a member of Parliament (1910-18; 1924-25); Governor of Bombay (1918-23); High Commissioner to Egypt (1925-29); Secretary of State for the Colonies since May, 1940; and government spokesman in the House of Lords since January, 1941. He was the author of *The Great Opportunity* (1919), *Egypt, since Cromer* (vol. 1, 1933, vol. 2, 1934), and *The British Case* (1940).

Lloyd George, Margaret (Mrs). Wife of Britain's

Prime Minister of the World War I period; died in Criccieth, Carnarvonshire, North Wales, Jan. 19, 1941; born in Criccieth, in 1864. In 1927 she wrote a series of articles recalling her days as First Lady of No. 10 Downing Street.

Lo, Wen-Kan. Chinese statesman, Foreign Minister of China in 1928 and again during 1932-33; died in Northern Kwangtung Province, China, Oct. 16, 1941; born in P'anyü, Kwangtung, China, 1888. Graduated from Oxford University, he served as Procurator General of Peiping in 1912-15; vice chairman of the Chinese Government's Law Codification Commission, 1916-26; Minister of Justice of China in 1921 and 1926; Chief Justice of the Chinese Supreme Court and also Chinese Minister of Finance, 1922; and Director General of the China Customs Administration, 1926-27.

Lobligeois, Felix. French physicist; died as a result of radium poisoning in Paris, France, Oct. 20, 1941. He was a pioneer in the furtherance of radium experiments. During the past few years he had been hurrying to complete additional radium experiments, for the poisoning had taken one arm in 1926 and only in August, 1941, had spread to the other arm, requiring amputation.

Lone Ranger. See FRASER, EARLE W.

Lord, Frederick Taylor. American educator and medical doctor; died in Boston, Mass., Nov. 4, 1941; born in Bangor, Me., Jan. 16, 1875. Graduated from the Harvard Medical School in 1900, he was appointed an assistant in clinical medicine at the School in 1905, becoming a professor in 1930, and retiring as professor emeritus in 1935. Dr. Lord was nationally prominent for his research into pneumonia. He was the author of *Diseases of the Bronchial Lungs and Pleura* (1915), *Pneumonia* (1922), co-author of *Lobar Pneumonia and Serum Therapy* (1936), and collaborated on *Chemotherapy and Serum Therapy of Pneumonia* (1938).

Loudon, Jonkheer Hugo. Dutch oil dealer, died in occupied Netherlands, Sept. 6, 1941; born at The Hague, 1860. Recognized for twenty years as one of "the leading generals on the British-Dutch side" in the battle for the control of the world's oil trade, he served as head administrator of the Royal Dutch Co. from 1894 to 1902, as manager, 1902-21, as a member of the board of directors during 1921-29, and since the year 1929 he was president of the board.

Lowy, Alexander. American chemist and educator, professor of organic chemistry at the University of Pittsburgh since 1918; died in Pittsburgh, Penn., Dec. 25, 1941; born in New York City, Mar. 31, 1889. Dr. Lowy was the holder of numerous patents on chemical research discoveries. He was vice-president of the American Electrochemical Society during 1930-33 and 1939-41. His published works include *Introduction to Organic Chemistry* (1922), *Study Questions in Organic Chemistry* (1932), and *Industrial Organic Chemicals and Dye Intermediates* (1935).

Luca, Henry Winters. American educator, noted leader in the establishment of higher education in China; died in Haverford, Pa., Dec. 7, 1941; born in Scranton, Pa., Sept. 24, 1868. An organizer of Shantung Christian University in Tsinan (1904), and of Yen Ching University in Peiping (1919), he was a leader in the unification movement, which led to the establishment of the associated boards for Christian colleges in China (1923).

Luca, Maximilien. French landscape painter; died in Paris, France, February, 1941; born, 1901. President of the Société des Artistes Indépendants, his paintings include *Cathédrale de Gisors*, *Char-*

leroi, *Notre-Dame, Pont de Sully*, *Paysages de Rolleboise*, and *Les Baigneurs*.

Luetjens, Guenther. German naval officer; drowned as the battleship Bismarck, under his command, went down before thundering British cannon, May 27, 1941; born in Germany, in 1889. The possessor of the Knight's Cross of the Iron Cross, German Nazi's highest military decoration, which he won for his exploits in the Norwegian campaign in 1941, Admiral Luetjens was lauded in Germany for sinking the British battle cruiser *Hood*, the airplane carrier *Glorious*, transport ship *Orama*, and the auxiliary cruiser *Jervis Bay* (1940).

McAdoo, William Gibbs. American politician; died in Washington, D.C., Feb. 1, 1941; born near Marietta, Ga., Oct. 31, 1863. He was educated at the University of Tennessee and was admitted to the bar in 1885. McAdoo practiced law in Chattanooga, Tenn., and dabbled in Democratic politics. In 1892 he came to New York, and formed a law partnership, with William McAdoo (unrelated) which lasted until 1903. Then he accepted a position as president and director of the Hudson & Manhattan Railroad Co., operating the Hudson River tunnel system, which completed, Mar. 8, 1904, the first tunnel under the Hudson River.

McAdoo, in 1912, became vice chairman of the Democratic National Committee, and in the Presidential campaign of that year was acting chairman during the greater part of the campaign. Acceding to the importunities of President Woodrow Wilson, he became Secretary of the Treasury in 1913. Then followed the chairmanship of the Federal Reserve Board; chairman ex-officio Federal Farm Loan Board; U.S. Secretary of International High Commission; Director General of U.S. Railroads, Dec. 28, 1917. He resigned as Secretary of the Treasury in 1918, and as Director General of Railways in 1919. During the war he was responsible for money-raising programs that provided the government with \$43,000,000,000. His second wife, whom he married in 1914, was a daughter of President Wilson.

In the Democratic National Convention of 1920, in spite of his wishes, he was placed as nominee for President, and lost to Frank M. Cox only on the 44th ballot. Again in 1924 he was placed as nominee for the Presidency, this time with his backing, but lost to John W. Davis after a long and bitter struggle. As chairman of the California delegation to the Presidential convention, 1932, in Chicago, he swung California's votes to Roosevelt—on the fourth ballot—and that started the stampede that won for the New York Governor. Back in California, he won his party's nominee as Senator, in a battle against old-line Democrats, and beat out the Republicans and Prohibitionists for the decision (1933-39). As Senator, McAdoo was faithful to the New Deal and its policies.

McAdoo withdrew from politics after his defeat in the primaries for reelection, and at his death was chairman of the board of the American President Steamship Line. He was the author of *The Challenge—Liquor and Lawlessness versus Constitutional Government* (1928), and *Crowded Years* (autobiography).

McCain, Henry Pinckney. American major general, Adjutant General of the U.S. Army from 1914 to 1918; died in Washington, D.C., July 24, 1941; born in Carroll Co., Miss., Jan. 23, 1861. He retired in 1921.

McCormick, Harold Fowler. American manufacturer and industrialist; died in Beverly Hills, Calif., Oct. 16, 1941; born in Chicago, May 2, 1872. Son of Cyrus Hall McCormick, inventor of the reaping

machine, he was a vice-president of the International Harvester Co., the largest manufacturer of farm machinery in the world, from 1902 to 1919, treasurer, 1906-16, president, 1918-22, chairman of the executive committee of the board of directors, 1922, and chairman of the board since 1935.

McCune, George Shannon. American educator; died in Chicago, Dec. 5, 1941; born in Pittsburgh, Pa., Dec. 15, 1873. An authority on Chinese and Japanese affairs and active for many years in educational and missionary work in Korea, Japan, he served as superintendent of schools at Pyeng Yang, Korea (1905-08), president of the Union Christian College, Pyeng Yang (1908-09; 1927-36), and general superintendent of schools of North Korea and president of Sin Sung School (1909-21). Dr. McCune was president of Huron College, South Dakota, during 1921-27, and since 1937 professor of psychology and missions at Moody Bible Institute, Chicago.

McCurdy, Charles A(lbert). British lawyer and politician; died in London, Eng., Nov. 10, 1941; born on Mar. 13, 1870. A member of Parliament during 1910-23, he served as Food Controller, 1920-21, and as Coalition Liberal chief whip, 1921-22. He had been a member of the bar since 1896.

McDonald, Angus D(anial) American railway president of the Southern Pacific Company since 1932; died in San Francisco, Calif., Nov. 15, 1941; born in Oakland, Calif., Apr. 14, 1878.

MacDowell, (William) Melbourne. American actor, matinee idol of the Nineties and a star of the early motion-picture days, died in Oakland, Calif., Feb. 19, 1941; born in South River, N.J., 1857.

MacDuffie, John. American educator; died in Springfield, Mass., Sept. 21, 1941; born in Cambridge, Mass., May 16, 1861. Graduated from Harvard in 1884, he was the founder of the MacDuffie School for Girls, Springfield, in 1890 and principal from 1890 to 1937.

McGarry, William (James). American Jesuit theologian and educator; died in New York, N.Y., Sept. 23, 1941, born in Hamilton, Mass., Mar. 14, 1894. Ordained a priest in the Roman Catholic Church in 1925, he was professor of mathematics and philosophy at Fordham University (1918-22); professor at Weston College (1930-37), president of Boston College (1937-39); and editor of *Theological Studies*, a Catholic quarterly, since 1939. Dr. McGarry was the author of several books, including *The Biblical Commission* (1931), *Anthropology and Knowledge of God* (1932), *Mystical Body* (1935), and *Paul and The Crucified* (1939).

McGrath, Matt(hew) J. American policeman and track star; died in New York, N.Y., Jan. 29, 1941; born in Nenagh, Co. Tipperary, Ire., Dec. 20, 1876. Competing in four Olympics—1908, 1912, 1920, and 1924—and still holder of the world's record for throwing the 56-pound weight, he won 21 national championships in weight throwing during 30 years of competition. Made a sergeant in the New York City police force (1917), he had advanced to an inspector at the time of his death.

McHarg, Henry K. American financier and philanthropist; died in Lake Wales, Fla., Jan. 28, 1941; born in Albany, N.Y., Feb. 6, 1851. Starting his business career in 1866 as a bank clerk, he rose to become director of several railway companies; a director of the Bank of Manhattan Co. (1882-1928), vice-president (1893-1920); owner of the Virginia and Southwestern Railway System (sold in 1906); and a member of the New York Stock Exchange (1872-1926). His philanthropies to religious, medical, and charitable organizations totaled \$2,000,000.

McKenzie, John Charles. American Republican Congressman from Illinois (1911-25); died in Elizabeth, Ill., Sept. 17, 1941; born in Woodbine Township, Jo Daviess Co., Ill., Feb. 18, 1860. Upon his retirement from Congress, he was appointed chairman of the commission in charge of the government's Muscle Shoals hydroelectric project, now known as the Tennessee Valley Authority.

McLean, Edward Beale American newspaper publisher; died in Baltimore, Md., July 27, 1941; born in Washington, D.C., 1883. He was a former publisher of the Washington Post, heir to an immense fortune, involved in the Teapot Dome and Elk Hills lease scandals of 1924-25-26; a close friend of the late President Harding; and husband of Evelyn Walsh McLean, owner of the famous Hope diamond. In October, 1933, he was legally declared to be of unsound mind and was confined to a hospital, where he died.

McNab, Alexander. American marine inventor and engineer; died aboard a train near Sanderson, Tex., Mar. 6, 1941; born in Glasgow, Scotland, 1876. Owner and founder of the Marine Iron Works, New London, Conn., he was the inventor of numerous marine devices, among them were direction indicators, dials, meters, ice detectors, and steering gear. He was the author of *McNab's Encyclopaedia of Marine Appliances*.

Magnusson, Carl Edward. American electrical engineer and educator, died in Seattle, Wash., July 11, 1941; born in Harris, Miss., Sept. 29, 1872. Graduating from the University of Minnesota in 1896, he went to the College of Engineering of the University of Washington as associate professor in 1904, became head of the department of electrical engineering in 1906, and was dean of the college from 1917 to 1929. An authority on electric power, Dr. Magnusson was on the American committee at the first world power conference in London (1924) and at the third in Washington, D.C. (1936). His publications include *Alternating Currents* (1916), *Electric Transients* (1926), *Direct Currents* (1929), and *International Boundary Waters* (1937).

Mahtab, Sir Bijay Chand. Maharajah of Burdwan; died in Burdwan, India, Aug. 29, 1941; born Oct. 19, 1881. Senior Hindu prince of Bengal, he traced his hereditary title to the Mogul Emperors and was paternal governor of more than 1,000,000 persons. His annual income was reported to be \$15,000,000. Throughout his career a staunch supporter of the British rule in India, he was active in Indian governmental affairs for 40 years. He was a member of the Imperial Legislative Council (1909-12); of the Bengal Legislative Council (1907-18); and president of the British Indian Association at Calcutta during 1911-18; 1925-28, and from 1935 to his death. Sir Bijay headed an Indian delegation to the British Imperial Conference in London in 1926, and in 1931 toured the United States and lectured at Smith College.

Mailhouse, Max. American educator and neurologist, professor of neurology at the Yale Medical School from 1907 to 1920 and thereafter professor emeritus; died in New Haven, Conn., Oct. 19, 1941; born in New Haven, Feb. 5, 1857.

Mallory, Frank B(urrr). American pathologist; died in Brookline, Mass., Sept. 27, 1941; born in Cleveland, O., Nov. 12, 1862. One of the world's foremost pathologists, he had been associated with Harvard University from 1890 and was professor emeritus of pathology since 1932. He was head of the Institute of Pathology at Boston City Hospital from 1897 until his retirement in 1933. He was noted as the discoverer of the scarlet fever bacillus

and the cause of cirrhosis of the liver. Dr. Mallory was the author of two books: *Pathological Technique* (in collaboration with Ames H. Wright), (1897), and *The Principles of Pathologic Histology* (1914).

Mann, Tom. British labor leader; died in Grassington, Yorkshire, Eng., Mar. 13, 1941; born in Foleshill, Warwickshire, Apr. 15, 1856. A leading propagandist for a social democratic federation and strong for trade unionism, he was, for more than 50 years, one of the most active of left-wing labor agitators in England and other countries. He began as a Socialist in 1885, and ended as a confirmed Communist. In 1889 he led his first strike, the London Dock strike in which he gained world-wide fame, and from then on whenever there was important labor strife he was certain to be involved; he saw the inside of prisons in England, Ireland, Australia, and New Zealand. His publications include *A Socialist's View of Religion, The Programme of the I.L.P. and the Unemployed, The Dockers and Sailors in 1897, The International Socialist Movement, Russia in 1921, Tom Mann's Memoirs, and What I saw in China* (1927).

Marchand, Jean. French artist; died in Paris, 1941; born in Paris, 1883. A painter of landscapes, figures, and portraits, he illustrated works of Paul Valéry, Paul Claudel, and Francis Jammes. His paintings include *St. Martin* (1907), *Allée d'Arbres* (1910), *Le Labcur* (1912), *Laveuses* (1913), *La Réfugiée* (1914), *Maternité* (1921), and *Les Kadenyehs* (1928). In 1933 he completed two paintings, *Travail* and *Les Jeux*, for the Ecole Municipale in Paris.

Marland, Ernest Whitworth. American ex-governor; died in Ponca City, Okla., Oct. 3, 1941; born in Pittsburgh, Pa., May 8, 1874. He was a member of the U.S. House of Representatives (1933-35), and Governor of Oklahoma during 1935-39. As Governor he achieved the launching of the \$22,000,000 Grand River hydroelectric flood-control project, an old-age pension amendment, unemployment insurance, and State wage-and-hour-control statutes. In 1936 and 1938 he attempted unsuccessfully to gain a seat in the U.S. Senate. Also an oil man, he won and lost two fortunes in the business, and at one time was reported to control holdings valued at \$85,000,000.

Marshall, John Patten. American educator and musician, professor of music at Boston University since 1903 and founder of the university's College of Music (1928); died in Boston, Mass., Jan. 17, 1941; born in Rockport, Mass., Jan. 9, 1877. His publications include *Syllabus of History of Music* (1906), *Syllabus of Music Appreciation* (1911), and *Musical Instruction for Army Bandmen*, written for the U.S. War Department.

Martin, Everett Dean. American educator and clergyman; died in Claremont, Calif., May 10, 1941; born in Jacksonville, Ill., July 5, 1880. He served numerous pastorates; was chairman of the National Board of Review of Motion Pictures (1919-22); president of the American Association for Adult Education (1939), and chairman (1939-40). He was the author of *Civilizing Ourselves, Farewell to Revolution, The Conflict of the Individual and the Mass, Some Principles of Political Association, and The Nature of the State*.

Martin, Frank Lee. American educator; died in Columbia, Mo., July 18, 1941; born in Benedict, Neb., July 7, 1881. Graduated from the University of Nebraska in 1902, he became assistant professor of the University of Missouri School of Journalism (1909-12), associate professor (1912-16), profes-

sor (1921-30), associate dean (1930-35), and dean since 1935. He was news editor of the Japan Advertiser, Tokyo, 1915-16, and exchange professor of journalism at the Yenching University, Peiping, China, 1931-32.

Martinez-Nadal, Rafael. Puerto Rican Senator; died in San Juan, Puerto Rico, July 6, 1941; born in Mayaguez, Puerto Rico, 1878. Serving in the Puerto Rican Legislature for more than 25 years, he was president of the Senate from 1932 to 1940. He founded the daily newspaper *El País*.

Marvell, George Ralph. American naval officer; died in Annapolis, Md., Nov. 12, 1941; born in Fall River, Mass., Sept. 25, 1869. Graduated from the U.S. Naval Academy in 1889, he had been Commandant of the Naval station at Manila (1927-30), and president of the Navy's general board at Washington (1932-33). During the World War he was in command of the battleship *Louisiana*, engaged in convoying troops to France. Admiral Marvell was promoted to a Captain in 1915 and was made a Rear Admiral in 1922, retiring in October, 1933.

Mascheroni, Edoardo. Italian conductor and composer; died in Milan, Italy, Mar. 4, 1941; born in Milan, Sept. 4, 1859. Director of the world première of Verdi's *Falstaff* at La Scala in 1893, he composed the operas *Lorenza* (1901) and *La Perugina* (1909).

Mason, (Joseph) W(arren) T(eets). American foreign correspondent and author; died in New York, N.Y., May 13, 1941; born in Newburgh, N.Y., Jan. 3, 1879. Author of the syndicated column "Today's War Moves" (1914-18), he had only recently returned to this country to resume his column. He served as correspondent to the London Daily Express (1908-31); as United Press writer on foreign affairs (1918-30); and writer on foreign affairs for *La Prensa*, Buenos Aires, since 1925. Also deeply interested in occidental and oriental philosophies and religions, he wrote *The Creative East* (1928), *The Meaning of Shinto* (1935), and *The Spirit of Shinto Mythology* (1939).

Mathews, Shailer. American educator, theologian and editor; died in Chicago, Oct. 23, 1941; born in Portland, Me., May 26, 1863. For more than half a century an exponent of religion as "an aspect of the social process," he was associated with the University of Chicago Divinity School from 1894, becoming dean of the School in 1908 and retiring as dean emeritus in 1933. Dr. Mathews served as president of the Federal Council of Churches of Christ in America during 1912-16; as director of the Chautauqua Institute religious work department, 1912-34; and since 1914 as a trustee of the Church Peace Union, an organization formed by Andrew Carnegie in 1913. Editor of *The World Today* during 1903-11, and of *Biblical World* from 1913 to 1920, he was the author of scores of books, principally religious, among them *The Social Teachings of Jesus* (1897), *A History of New Testament Times in Palestine* (1899), *The Church and the Changing Order* (1907), *The Faith of Modernism* (1924), *Creative Christianity* (1935), and *New Faith for Old: An Autobiography* (1936).

Mead, Kate Campbell Hurd. American physician and writer; died in Haddam, Conn., Jan. 1, 1941; born in Danville, Quebec, Can., Apr. 6, 1867. She was medical director at Bryn Mawr School in Baltimore (1890-93); practiced her profession in Middletown, Conn. (1893-1925); and from 1925 to 1929 was engaged in research on the history of women in medicine for her books, *American Medical Women Pioneers* (1933) and the first

volume of a series called *A History of Women in Medicine* (1938).

Menocal, Mario García. Cuban politician; died in Havana, Cuba, Sept. 7, 1941; born in Hanabana, Matanzas Province, Dec. 17, 1866. President of Cuba from 1913 to 1921, he was candidate for that office four times, distinguished himself as a commanding officer in the Cuban War of Independence, and built and operated for the Cuban American Sugar Company one of the largest sugar mills in the world. General Menocal's administration put in force numerous reforms in the handling of the government departments, and attempted to improve relations with the United States. With the end of the World War, Cuba began to experience severe financial difficulties, and General Menocal's enemies accused him of fraud, maladministration, and responsibility for the bankruptcy of the country, but these charges were soon dropped and Menocal continued to be a powerful force in the policies of the government. In 1931 he led an armed uprising against the administration of President Gerardo Machado, but the revolt was short-lived and General Menocal was exiled, however, in 1933 he returned to Cuba and formed the National Democratic party, running as his party's nominee for President in 1936. He was defeated in a close election. In spite of his political losses he remained high in Cuban society and continued to be a leader of the opposition.

Merejkowski, Dmitri. Russian novelist and philosopher, died in Paris, France, 1941; born in Russia, 1865. Employing history as a basis for his fictional developments, he was the author of numerous works in which his sound historical scholarship was interpolated with mystical revelations. His publications include *The Rejected*, *The Romance of Leonardo da Vinci*, *Jesus the Unknown*, *Jesus Manifest*, and books on Peter the Great, Akhnaton, the mystic King of Egypt, Michael Angel, and Napoleon.

Metaxas, John. Greek general and politician, died in Athens, Jan. 29, 1941, born on the Isle of Ithaca, Apr. 12, 1871. As an officer in the Greek army, he served in the war against Turkey (1897) and the Balkan wars of 1912 and 1913, resigning in 1920 to enter politics as head of the Free Opinion Party. His rise in power followed the restoration of the exiled monarch—King George—to the throne in 1935, after 11 years of republicanism. General Metaxas was appointed Premier in 1936, and as such abolished Parliament, denied the right to strike, and suspended liberties of the press. He spent over \$100,000,000 rebuilding the army and equipping it for modern warfare, sought friendship with his Balkan neighbors, and completed an entente cordiale with Turkey. As a result of his efforts the Greeks fielded a fine army, defeating the Italians in the early stages of the Italo-Greek conflict of 1940 and advancing far into Albania. On July 30, 1938, after the suppression of a revolt in Crete, he was proclaimed "Premier for life."

Millard, Bailey. American editor and author, editor of the magazine *Cosmopolitan*, 1905–07, managing editor of *Munsey's*, 1913–14, editor of *Orchard and Farm*, 1916–18, and since 1924 special writer for the Los Angeles Times; died in Los Angeles, Calif., Mar. 20, 1941; born in Markesan, Wis., Oct. 2, 1859. In addition to hundreds of stories and articles, he was the author of several books, among them *Fettered Commerce* (1892), *She of the West* (1900), *Songs of the Press* (1902), *The Sea Hawk* (1910), and *Sunland Song* (1933).

Mille, Pierre. French writer of many novels and historical works on the colonial empire; died in

Paris, Jan. 15, 1941; born, 1864. Former vice-president of the Société des Gens de Lettres, he was the author of, among others, *De Thessalie en Crète* (1897), *Sur la vaste terra* (1905), *Anthologie des humoristes français* (1912), *Histoires exotiques et merveilleuses* (1920), and *Le bel art d'apprendre, Chez les Hommes de l'Ombre et du Soléil* (1932).

Miller, Dayton Clarence. American physicist and educator; died in Cleveland, O., Feb. 22, 1941; born in Strongsville, O., Mar. 13, 1866. Connected with Case School of Applied Science since 1890 and professor of physics since 1895, he was widely known for his experiments in the measurement of "ether drift," which tended toward a modification of Albert Einstein's relativity theory. He is believed to have owned the world's largest collection of flutes, they were exhibited in New York City in 1927.

Mitsui, Benzo. Japanese industrialist; died in Tokio, Japan, May 22, 1941. Director of the Mitsui Bussan Kaisha and of the Mitsui Mining Corporation, he was a member of one of Japan's foremost financial and industrial families who maintain offices in the United States and other capitals throughout the world (Mitsui & Co., Ltd.).

Mollison, Amy Johnson. British aviatrix, drowned in Thames River, London, Eng., Jan. 5, 1941, in an attempt to parachute to safety from a falling plane; born in Hull, Eng., in 1908. She occupied a position in British aviation that was comparable to that held formerly by Charles A. Lindbergh in the United States. In 1930 she flew from London to Australia, the first woman to accomplish that feat. In 1931 she set new records for flights to Japan, from England, and back. In 1932 she flew solo from England to Capetown, again making new records both ways. The next year, along with her husband, Capt. James A. Mollison, she set a new trans-Atlantic record—taking off from Wales and landing in Connecticut thirty-nine hours later. She was the author of the well-known book *Sky Roads of the World* (1939).

Monnier, Henri. French theologian, died Aug. 21, 1941, born in St. Quentin, France, Apr. 24, 1871. An outstanding Protestant leader, he was professor of theology at the Free Faculty of Protestant Theology of Paris and was pastor of the Reformed Church of L'Etoile, Paris.

Montague, James J. American newspaper writer, died in Belmont, Mass., Dec. 16, 1941; born in Mason City, Ia., Apr. 16, 1873. Formerly a reporter and assistant editor of *The Portland Oregonian* and Washington correspondent for the Universal Service, Hearst news service (1912–16), he was mainly noted as the author of the syndicated column "More Truth Than Poetry," which he ran in the *New York Herald Tribune* from Dec. 12, 1921 to May 16, 1936. He was the author of *More Truth Than Poetry* (1920).

Moore, C. Ellis. American ex-congressman (Rep.); died in Cambridge, O., Apr. 2, 1941; born in Middlebourne, Guernsey Co., O., Jan. 3, 1884. A militant dry leader from Ohio, he served in the 66th to 72d Congresses (1919–33).

Moore, R(ober) Walton. American lawyer and politician, distinguished legislator and authority on international law; died in Fairfax, Va., Feb. 8, 1941; born in Fairfax, Feb. 26, 1859. A member of the U.S. House of Representatives (1919–31), he served as Counselor of the Dept. of State from May, 1937, until his death.

Moore, William Emmet. American editor, managing editor of *The Baltimore Sun* since 1929 and news editor-in-chief of *The Baltimore Sun* and *The Baltimore Evening Sun* the last two years; died in

Miami Beach, Fla., Dec. 27, 1941; born in La Grange, Mo., June 30, 1878. During 1899-1917 he served on various papers throughout the country, becoming associated with *The Baltimore Sun* in 1922. In World War I he was director of "the pictorial history of the A.E.F.," attached to General Pershing's general headquarters. He published *Democratic Campaign Text Book* (1920), and *U.S. Official Pictures of the World War* (1920).

Morehouse, Daniel W(alter). American educator and astronomer, died in Des Moines, Ia., Jan. 21, 1941; born in Mankato, Minn., Feb. 22, 1876. Immediately after receiving his degree of bachelor of science from Drake University (1900), he was made professor of physics and astronomy, and in 1923 ascended to the presidency, which post he held until his death. He established his reputation as an astronomer by the discovery of the Morehouse Comet on Sept. 1, 1908, although some time before he had discovered Comet C. He was a member of the American Astronomical Society, British Astronomical Association, and a fellow of the Royal Astronomical Society.

Morgan, Helen. American actress and songstress, died in Chicago, Oct. 8, 1941; born in Danville, Ill., Aug. 2, 1900. Since 1920 she had been a vaudeville star, a headliner in musical shows, and the "name in lights" in several New York night-clubs. She was a "hit" as Julie in Ziegfeld's *Show Boat* during 1927-28-29, in Hammerstein's *Sweet Adeline*, 1929, and in George White's *Scandals of 1936*. In the past few years she had played in several motion pictures.

Morgan, Tali Esen. American musical author and conductor; founder of the International Correspondence Schools of Music and director of the Ocean Grove Auditorium (Ocean Grove, N.J.) from 1901 to 1918, died in Asbury Park, N.J., July 1, 1941; born in Llangynwyd, Glamorgan-shire, South Wales, Oct. 28, 1858.

Morton, James F(erdinand). American curator of the Paterson Museum since 1925, died in Paterson, N.J., Oct. 7, 1941; born in Littleton, Mass., Oct. 18, 1870. An author, bibliophile, and collector of rare minerals, he was extremely active in the single-tax ideas of the late Henry George, writing two books on the subject, *Single Tax Review* and *The Philosophy of the Single Tax*. Also a champion of Negro rights, he wrote *The Curse of Race Prejudice* (1906).

Mosca, Gaetano. Italian political scientist; died in Rome, Italy, Nov. 9, 1941; born in Palermo, Sicily, 1858. He taught at the University of Turin during 1896-1922, at the University of Palermo, 1885-96, and from 1924 until he retired in 1933 he taught the history of political doctrines at the University of Rome. He served as Under-Secretary for the colonies, 1914-16, and since 1919 had been a Senator. A writer on constitutional law, political science and history of political doctrines, he was the author of numerous works, including *Sulla Teorica dei Governi e sul Governo Parlamentare* (1884), *Elementi di Scienza Politica* (1896), *Diritto costituzionale* (1908), *L'evoluzione actuelle du regime representatif* (1928), and *Cenni storici e critici sulle dottrine razziste* (1933).

Mosher, Gouverneur Frank. American Protestant Episcopal bishop and missionary; died in New York, N.Y., July 19, 1941; born in Stapleton, S.I., N.Y., Oct. 28, 1871. Ordained a deacon in 1896 and a priest in 1898, he was a missionary in China during 1896-1920. In 1920 he became second Bishop of the Philippine Island Missionary District, retiring in 1940. As an author, he published *Handbook of the China Missions* (1913).

Mott, Lewis Freeman. American educator, professor of English at the College of the City of New York from 1897 to 1934; died in New York City, Nov. 20, 1941, born in New York City, Sept. 29, 1863. Professor Mott served as president of the American Dialect Society during 1899-1900 and as president of the Modern Language Association of America in 1911. He was the author of *The System of Courtly Love* (1894), *The Provençal Lyric* (1901), *Ernest Renan* (1921), and *Sainte-Beuve* (1925).

Moure, Jean. French laryngologist; died in France, November, 1941; born in Bordeaux, France, 1855. The most prominent French laryngologist, he had served for approximately forty years as clinical professor of otorhinolaryngology of the medical faculty of Bordeaux University. In 1904 he had served as president of the International Congress of Otology at Bordeaux. Dr. Moure was credited with transferring laryngology from the medical to the surgical field, was famed for his operations, and was the originator of operations and instruments used in his specialty. Dr. Moure was the author of *Study of Larynx Cysts*, *Manual of Diseases of the Nasal Passages*, and *Elementary Treatment and Practice in Diseases of the Throat and Larynx*.

Mowat, Robert Balmain. British historian; died aboard an eastbound trans-Atlantic transport plane which crashed on the United Kingdom's West Coast, Sept. 2, 1941; born in Edinburgh, Scotland, Sept. 26, 1883. One of the most brilliant and most prominent of historians, he was a fellow and tutor of Corpus Christi College, Oxford (1907-28); a member of the Naval Intelligence Department (1916-18); engaged in the Secretariat of the War Cabinet (1918-19); a professor of history at the University of Wisconsin (1925-26), and professor of history at the University of Bristol since 1928. Dr. Mowat came to the United States in 1940, under the auspices of the Carnegie Endowment for International Peace, to lecture at the leading universities and colleges. The author of many books on European and American history, his publications include *The Later Middle Ages* (1916), *The Life of Henry V* (1920), *A History of Great Britain* (1920-21), *Contemporary Europe* (1924), *The Diplomatic Relations of Great Britain and the United States* (1925), *The States of Europe, 1815-71* (1932), *The Americans in England* (1935), and *The American Entente* (1939).

Muhlfield, John E(rhardt). American railway engineer and designer, died in New York, N.Y., June 19, 1941; born in Peru, Ind., Sept. 18, 1872. He designed the first Mallet articulated type of locomotive in operation in the United States, assisted in the development of powdered fuel burning for locomotives and stationary power plants, and in the creation of types of high-pressure freight locomotives. He served as consulting engineer to many large railroad concerns. His publications included many pamphlets and papers; he contributed to the *Encyclopedia Britannica*, and several books, of which *The Railroad Problem and the Solution* was, perhaps, best known.

Muir, Ramsay. British politician and writer; died at Pinner, Middlesex, Eng., May 4, 1941; born in 1872. He was a prominent Liberal member of Parliament from Rochdale (1923-24) and president of the National Liberal Federation (1933-36). A noted writer on historical, political, and economic subjects, his publications include *Atlas of Modern History* (1911), *Nationalism and Internationalism* (1916), *America the Golden* (1927), *British History* (1928), *A Brief History of*

Our Own Times (1934), and *Civilisation and Liberty* (1940).

Murphy, James J(oseph), Jr. American consul, chief of the Division of Commercial Affairs, State Department (1924-40), and U.S. Consul General at Hamburg, Germany, since Aug. 2, 1940; died in Berlin, Jan. 6, 1941; born in Philadelphia, Pa., in 1888.

Murphy, J. Harvey. American clergyman, president of the General Synod of the Reformed Church of America in 1938-39; died in Hudson, N.Y., Sept. 19, 1941; born in Paterson, N.J., Apr. 28, 1882. Since 1921 pastor of the First Reformed Church in Hudson, he preached at the English Church, The Hague, the Netherlands, during 1931.

Murray, Charlie. American actor; died in Hollywood, Calif., July 29, 1941; born in Laurel, Ind., June 22, 1872. A comedian for nearly half a century on the stage and screen, he was of that era of slapstick comedy when a custard pie in the face was the height of clowning. For twenty-one years he was a partner in the comedy team of Murray and Mack (Oliver Trumbull). Among the motion pictures in which he played were *Cohens and Kellys* (a series), *McFadden's Flats*, *The Gorilla*, *Irene, Do Your Duty*, *King of Jazz*, *Around the Corner*, *His Honor the Mayor*, and *Caught Cheating*.

Mussolini, Bruno. Italian aviator, son of Il Duce; killed in an airplane crash near Pisa, Italy, Aug. 7, 1941; born in Milan, Italy, Apr. 22, 1918. A captain in the Italian air fleet, he had followed his father's advice to "live dangerously" by fighting in the Ethiopian and Spanish Civil wars and in the present world conflict, and had made a trans-Atlantic flight from Rome to Rio de Janeiro (1938). Captain Mussolini and a crew of six were testing a four-motored bombing plane when it crashed to the ground.

Nagayo, Matao. Japanese educator; died in Tokyo, Japan, Aug. 16, 1941; born in Tokyo, Apr. 6, 1878. Graduating from the Tokyo Imperial University (1904), he studied pathology in Germany (1907-10); was director of the Government Institute for Infectious Disease (1919-32); dean of the medical faculty at the Tokyo Imperial University (1932-34), and was elected president of the university in 1934. At his death he was a professor emeritus of the university. A noted authority on bacteriology and cancer, he attended the Tropical Pathology Conference (1921).

Naon, Romulo S. Argentine diplomat, Minister to the United States (1910-14) and Ambassador (1914-19); died in Buenos Aires, Argentina, Dec. 30, 1941; born in Buenos Aires, Feb. 17, 1876. A member of many international commissions, Dr. Naon had served as a deputy to the National Congress (1902-08), professor of constitutional law at the University of Buenos Aires, and Minister of Justice and Education of Buenos Aires (1908-10). Dr. Naon was an ardent supporter of the Allied cause in World War I, and found it his duty to resign (1918) as Ambassador when his country would not enter the war along with the Allies.

Natalia, Queen of Serbia (1882-88); daughter of Colonel Keckho, a Russian, and Princess Pulcherie Stourdz of Rumania; died in Paris, May 8, 1941; born in Florence, Italy, May 2, 1859. In 1875 she married Prince Milan Obrenovich, who later succeeded to the Serbian throne (1882-99). She was divorced from King Milan in 1888, due to his many infidelities, and when her son, Alexander, was assassinated (1903) retired to France for the remainder of her life.

Nernst, Walter H. German physicist and inventor;

died in Muskau, Germany, Nov. 18, 1941; born in Germany, June 25, 1864. Founder of the Institute for Physical Chemistry, he was the inventor of the metallic filament lamp, which made the modern incandescent lamp possible. His "third law" of thermo-dynamics, having to do with the behavior of matter at the approach of absolute zero, brought him the Nobel Prize for Chemistry in 1920. Professor Nernst invented the micro-scale, an instrument of such sharp precision that it turned at the weight of one-millionth of a milligram. He was a leader in the group of scientists who "created physical chemistry, bridging physics and chemistry, and enabling highly exact mathematical calculations of chemical reactions." He was the author of numerous scientific standard works, including *Ziele der physikalischen Chemie* (1896), *Die Bedeutung des Stickstoffs für das Leben* (1913), *Lehrbuch der theoretischen Chemie* (1915), and *Die theoretischen und experimentellen Grundlagen des neuen Warmesatzes* (1918).

Nevinson, Henry W(oodd). British war correspondent and author, died at Chipping Campden, Gloucestershire, Eng., Nov. 9, 1941; born in Leicester, Eng., 1856. A war correspondent since 1897, he had, in spite of his stand as a pacifist, covered almost every war, small or large, that took place during his career. Among his books are *Ladysmith* (1900), *Between the Acts* (1903), *Books and Personalities* (1905), *The Dawn in Russia* (1906), *The Dardanelles Campaign* (1918), *More Changes More Chances* (1925), *England's Voice of Freedom* (1929), *Fire of Life* (1935), and *Films of Time* (1938).

Newell, Edward Theodore. American numismatist, president of the American Numismatic Society since 1916; died in New York, N.Y., Feb. 18, 1941; born in Kenosha, Wis., Jan. 15, 1886. He was one of the foremost authorities in the field of Hellenistic coinages, and had acquired a singularly thorough knowledge of Greek and Roman coins. He also spoke authoritatively on the coinage of the Sasanians and Byzantines, and on the Mahometan and Indian coinages. He was the recipient of the American Numismatic Society's Archer M Huntington Medal (1918) and the medal of the Royal Numismatic Society of England (1925). His publications include *The Dated Alexander Coinage of Sidon and Ake* (1916), *Tarsos Under Alexander* (1919), *Some Unpublished Coins of Eastern Dynasts* (1926), and *The Kuchuk Kohne Hoard* (1931).

Newlon, Jesse H(omer). American educator; died in New Hope, Pa., Sept. 1, 1941, born in Salem, Ind., July 16, 1882. Superintendent of schools in Lincoln, Nebraska (1917-20) and in Denver, Colorado (1920-27), he had been professor of education at Teachers College, Columbia University, since 1927. He also had been director of the Lincoln School at Teachers College (1927-37); chairman of the college's division of instruction (1934-38), and from 1938 until his death, director of the college's division of the foundation of education. He was president of the National Education Association, 1924-25. A leader in experimental progressive education and a champion of academic freedom, Dr. Newlon believed that American high schools were thirty years behind the times and that the schools were doing little to prepare the graduate to take his place in a democratic society. He was the author of *Educational Administration as Social Policy* (1934), and *Education for Democracy in Our Time* (1939).

Newton, Walter Hughes. American Congressman (Rep.); died in Minneapolis, Minn., Aug. 10, 1941; born in Minneapolis, Oct. 10, 1880. A member of the 66th to 71st Congresses (1919-31), he

resigned on July 1, 1929, to become secretary and administrative assistant to President Hoover during his tenure in office. He was a member of the Federal Home Loan Bank Board (1933-34).

Nice, Harry (Whinna). American ex-governor; died in Richmond, Va., Feb. 25, 1941; born in Washington, D.C., Dec. 5, 1877. Defeated in 1919 by Albert C. Ritchie, life-long political foe, for the governorship of Maryland (by 165 votes) he came back in 1934 to reverse the tables and succeed Ritchie as governor (1935-39)—one of three Republicans ever elected to that office. Governor Nice ran for reelection (1938), but was defeated, and after his failure to attain a seat in the U.S. Senate (1940) he retired.

Noel, Carlos M. Argentine public man; died in Pozo de Caldas, Brazil, Jan. 3, 1941; born in Buenos Aires, in 1886. He served as Minister to Chile (1919), advanced to Ambassador in 1923. Subsequently he served two terms as Mayor of Buenos Aires, but was exiled from the country in 1931 (for his activities in the Civic Union Radical Party), being permitted, however, to return that same year. He was president of the Chamber of Deputies for the periods 1936-37 and 1937-38.

Nollet, Edouard. French army officer; died at Royat, France, Jan. 29, 1941; born, 1865. Hero of the capture of Saint Quentin in the World War (1914-18), General Nollet was president of the Inter-Allied Control Commission (1915-24) and as such supervised the disarmament of Germany. He was the French Minister of War during 1924-25.

Norton, Thomas Herbert. American chemist and editor, died in White Plains, N.Y., Dec. 2, 1941; born in Rushford, N.Y., June 30, 1851. Graduated from Hamilton College, New York (1873) and from the University of Heidelberg, Germany (1875), he was manager of a large chemical works in Paris, France (1878-83); professor of chemistry at the University of Cincinnati (1883-1900); appointed by President McKinley to establish the U.S. consulate at Harput, Turkey (1900); sent by U.S. Government to investigate conditions in Armenia, 1904, to Persia, 1904-05; and was American consul at Smyrna, Turkey, 1905-06, and at Chemnitz, Saxony, 1906-14. He was appointed by the U.S. Department of Commerce to help develop the American dyestuff industry (1915-17). Dr. Norton was editor of *The Chemical Engineer* during 1917-18, and from 1920 to 1929 was editor of *Chemicals*. Since 1930 he had been a research chemist for the American Cyanamide Company. His publications include *Utilization of Atmospheric Nitrogen* (1912), *Dyestuffs for American Textile Industry* (1915), *The Dyestuff Census* (1916), and *Reflections at the 70th Milestone* (1921).

Noyes, William Albert. American chemist; died in Champaign, Ill., Oct. 24, 1941, born in Independence, Ia., Nov. 6, 1857. Receiving his doctor's degree in philosophy from Johns Hopkins College, Baltimore, in 1882, Dr. Noyes began his teaching career as a professor of chemistry at the University of Tennessee (1883-86), and at the Rose Polytechnic Institute, Indiana (1896-1903). He was chief chemist of the National Bureau of Standards during 1903-07. In 1907 he became professor of chemistry and director of the chemical laboratory at the University of Illinois, holding that post until 1926 when he became professor emeritus. In Dr. Noyes' last year at the university the first chemical element discovered in America, illinium, was isolated in his laboratories.

Dr. Noyes was editor of *The Journal of the American Chemical Society* (1902-17), of *Chemical Abstracts* (1907-09), of *Chemical Reviews* (1924-

26), and of *Scientific Monographs*, American Chemical Society. He was the recipient of the Nichols Medal, 1908, the Willard Gibbs Medal, 1919, and the Priestley Medal of the American Chemical Society, its highest honor, in 1925. Dr. Noyes was the author of many textbooks.

Nutting, Wallace. American photographer, antiquarian, and writer; died in Framingham, Mass., July 19, 1941; born in Marlboro, Mass., Nov. 17, 1861. After 17 years as a Congregational minister, he retired from the ministry in 1905, due to ill health, and devoted his life to photography, writing, and the collection and study of antique furniture. His "States Beautiful" series depicts architecture, interiors, and furniture (especially that of New England).

O'Brien, Edward (Joseph) (Harrington). American author and short story editor; died in Buckinghamshire, England, Feb. 25, 1941; born in Boston, Mass., Dec. 10, 1890. A graduate of Harvard (1909), he was the editor of poetry magazines, wrote plays and verse, and in 1915 began his annual volumes of *The Best Short Stories*. He was editor of many other short story books and author of several books, including *White Fountains* (1917), *The Forgotten Threshold* (1919), *The Advance of the American Short Story* (1923), *The Dance of the Machines* (1929), and *Son of the Morning*, a portrait biography of Nietzsche (1932).

Ochoa, Armando Humberto da Gama. Portuguese statesman, Minister to France since 1926; died in Vichy, France, June 9, 1941; born in 1877.

O'Connor, Andrew. American sculptor; died in Dublin, Ireland, June 9, 1941; born in Worcester, Mass., June 7, 1874. With the first prize award of the Salon des Artistes Français in Paris (1928) for his statue *Tristan and Isolde*, he won a rare distinction, for it was the first time in 141 years that the award had gone to a foreigner. Three years later he became the first American sculptor to be admitted to the Tate Gallery, London. The gallery accepted his *Mother of Sorrows*, a bronze figure of a kneeling woman. Best known in the United States for his statue of Abraham Lincoln—for which he received \$50,000—located in Springfield, Ill., he also accomplished many other notable works, principally the 11 marble statues on the Essex County Courthouse, Newark, N.J.; General Liscum monument, Arlington, Va.; General Lew Wallace statue, Washington, D.C.; Daniel O'Connell statue, Dublin, and the Roosevelt Memorial located in Glen View, Ill.

O'Connor, James, Sr. American Democratic Congressman from Louisiana during 1919-31; died in New Orleans, La., Jan. 7, 1941; born in New Orleans, Apr. 4, 1870.

Ohl, Jeremiah Franklin. American Lutheran clergyman, superintendent of the Philadelphia City Mission of the Evangelical Lutheran Church from 1903 to 1930; died in Philadelphia, Jan. 21, 1941; born in Cherryville, Northampton Co., Pa., June 26, 1850. He served as editor of *The Common Service Book of the Lutheran Church* (1917), and was the author of numerous religious works including *School and Parish Hymnal* (1892), *The Responses of Matins and Vespers Set to Music* (1909), *The Inner Mission: A Handbook for Christian Workers* (1911), and the Christmas cantata *The Christ Child* (1925).

Oman, Joseph Wallace. American rear admiral, Governor of the Virgin Islands in 1920-21; died in London, Eng., July 1, 1941; born in Columbia Co., Penn., Aug. 15, 1864. He supervised the reconditioning of the old German liner *Vaterland*, renamed *Leviathan*, during the World War and was in com-

mand on her first voyage from the United States to Liverpool as a troop transport.

Paderewski, Ignace Jan. Polish musician and statesman; died in New York, N.Y., June 29, 1941; born in Kurilovka, Province of Podolia (then Southwest Russia), Nov. 6, 1860. At an early age Paderewski's father recognized the latent talent in his son and sent him to a music teacher; at the age of 12 the young musician was giving public concerts. In 1882 he went to Berlin to study under Wurst and Urban, and by this time had acquired a partial reputation. With successful concerts in Vienna in 1887 and 1889, and in Paris in 1888, Paderewski experienced a preview of the renown he was to win later.

It wasn't until 1891 that he came to America, and set new records for the amount of money earned by pianists—he played at 117 recitals in 90 days. When he returned in 1891 he commanded a fee of \$2,500 a performance, and grossed \$180,000. During the years between 1892 and 1914 he gave performances on the continent; coming to the United States in 1902.

When war was declared (1914) Paderewski set out for the United States, and immediately began the organization of the 4,000,000 Poles in this country. In 1917, when the United States entered the war, he started the Polish Legion in America, urging all Poles to join up, and by June, 1918, 18,000 Poles had been sent overseas. At the close of the war he returned to Poland and devoted his labors towards the rehabilitation of his country. A social democrat, Paderewski accepted the posts of Premier and Minister of Foreign Affairs, proffered to him by General Pilsudski, a socialist. Later, in the Polish elections, he could have been elected President by acclamation, but he declined, and Pilsudski became President. As Premier, Paderewski attended the Versailles Peace Conference; maintained his country's rights, and proved his might as a statesman. The outcome of his efforts was the *Polish Corridor*, and, although it did not meet with popular approbation, Parliament ratified the pact in 1919. Returning from Paris, he found his political support in danger of collapse, and General Pilsudski vacillating; with the announcement, by the Allies, that Poland could have merely a 25-year mandate to administer East Galicia the Cabinet fell and Paderewski resigned, disheartened, his wealth decreased by \$2,700,000 in gifts to Poland.

He turned back to the piano (1922), which he had not touched in three years "in case the old habit comes back and demands my time," and renewed touch with United States music audiences.

Paderewski donated many of his recitals to charity and philanthropy. In 1932, in Madison Square Garden, New York, playing before an audience of 16,000, he swelled the fund of the Musicians Emergency Aid by \$33,500; and it was a concert for charity that prevailed upon him to appear in Washington (1925) for the first time since the war. In 1936 music lovers thrilled to the event of seeing him perform, on the piano, in a motion picture *Moonlight Sonata*, but in 1939 they had to say good-bye, as he presented his last American tour, the twentieth.

Returning to Poland (1939) he arrived in time to take action against Germany, and in a radio address castigated Hitler for his actions. After Poland was invaded he was mentioned as President, following the flight of President Moszicki to Rumania, but he declined and gave his support to the exiled Polish Government. On Jan. 11, 1940 he accepted a seat in the exiled Government, and on January 22 agreed to become President of the Polish Parliament in Exile.

In September, 1940, he came to the United States, and made his permanent home in California. He gave a broadcast in December, urging aid to Great Britain; in March, 1941, he enjoyed a Paderewski Week, donated by communities throughout the United States, and one of his last activities was to help in the establishment of a Paderewski Hospital in Edinburgh, Scotland, for the use of Polish soldiers and civilians, and for British civilians in time of need.

Since his first success, he had received degrees from most of the great universities of the world, and decorations from many countries; in return he had established the Paderewski Fund (1900) by a grant of \$10,000 to aid musical education in America. He was the author of *My Story* (with Mary Lawton), (1937). Many posthumous awards were made.

Papi, Gennaro. Italian-American conductor; died in New York City, Nov. 29, 1941; born in Naples, Italy, December, 1886. He was assistant conductor to Arturo Toscanini at the New York Metropolitan Opera, 1913-16, conductor of Italian repertoire at the Metropolitan Opera in 1916-25 and since 1935.

Pardee, George Cooper. American ex-governor; died in Oakland, Calif., Sept. 1, 1941; born in San Francisco, Calif., July 25, 1857. Active in public life since 1889, he was Governor of California from 1903 to 1907.

Parmoor, 1st Baron, of Frieth, Charles Alfred Cripps. British lawyer and politician, father of Sir Stafford Cripps, British Ambassador to Soviet Russia; died in Buckinghamshire, Eng., May 31, 1941; born, Oct. 3, 1852. He served as Vicar General of Canterbury (1902-24), and as a Conservative member of Parliament (1895-1914). He was knighted in 1908 and elevated to the peerage in 1914. After the World War he became a prominent member of the Labor party, and as such became Labor Lord President of the Council (1924; 1929-31). Lord Parmoor was an ardent advocate of peace, approved the principles of the League of Nations, and pursued the theory that the best way to entice the United States into the League was to make it an effective instrument for peace.

Parsons, Elsie Clews. American anthropologist and sociologist; died in New York City, Dec. 19, 1941, born, 1876. Dr. Parsons graduated from Barnard College, New York, in 1896 and taught sociology there during 1899-1905. In 1916 she became interested in anthropology, particularly ethnography, and during the next twenty-five years went on at least that many field trips and published twenty-one volumes of anthropological studies. She specialized in the American and West Indian Negroes and the Indians of the Southwest Pueblos. Dr. Parsons was a former president of the American Ethnological Society and the American Folklore Society, a former vice-president of the New York Academy of Sciences, and since December, 1940, president of the American Anthropological Association. Her most important published work is considered to be the two-volume *Pueblo Indian Religion* (1939); other works include *Religious Chastity* (1913), *The Old-Fashioned Woman, Fear and Conventionality, Social Freedom, Folk-Tales of Andros Island, Winter and Summer Dance Series in Zuni, Pueblo of Jemez, Social Organization of the Tewa of New Mexico*, and *Notes on the Caddo*.

Parsons, Floyd William. American editor and author; died in New York, N.Y., Aug. 7, 1941; born in Keyser, W. Va., Jan. 23, 1880. A graduate of the University of West Virginia (1902), he had been associated with the Robbins Publishing Co., publishers of trade and business periodicals, for 21

years. At his death he as a member of the board of directors, editorial director, and vice-president of the company, editor of *Gas Age-Record and Industrial Gas*, and contributing editor of *Advertising and Selling*. He was founder and editor of *Coal Age* from 1910 to 1918. His publications include *American Business Methods* (1921), *Everybody's Business* (1923).

Partridge, Frank. English prelate; died in England, Oct. 1, 1941; born Dec. 31, 1877. Recognized as greatly responsible for the building up of English churches and church finances after the World War, he was financial secretary to the National Assembly of the Church of England from 1921 to 1934, chaplain to the King during 1934-36, and Bishop of Portsmouth since 1936.

Pasha, Mohammed Mahmoud. Egyptian statesman; died in Cairo, Egypt, Feb. 1, 1941; born in Upper Egypt, in 1877. One of the founders of Egypt's Liberal party, and a firm believer in close Anglo-Egyptian relationship, he served as Premier during 1928-29, and held numerous Ministerial portfolios before again becoming Premier (1938-39). In June, 1940, he was called back into the Cabinet as Minister of Defense and as such advocated strengthening of national defense and assistance to England.

Patterson, Banjo (Andrew Barton). Australian song writer; died in Sydney, Australia, Feb. 5, 1941; born in Narrambia, Australia, Feb. 17, 1864. Correspondent for several Australian newspapers during the Spanish-American War, the Boer War, and the World War, he was the author of many favorite Bush ballads and verses. His works include *The Man from the Snowy Riteer and Other Verses* (1895), *Rio Grande's Last Race and Other Verses*, *Saltbush Bill and Other Verses*, *Old Bush Songs*, *An Outback Marriage* (a novel), and *Three Elephant Power* (tales and sketches).

Paxton, William McGregor. American portrait artist whose work included portraits of Presidents Grover Cleveland and Calvin Coolidge; died in Boston, Mass., May 13, 1941; born in Baltimore, Md., June 22, 1869.

Pell, Robert P(aine). American educator; died in Orlando, Fla., Feb. 8, 1941; born in Washington, D. C., June 12, 1860. A graduate of the University of North Carolina, he was president of the Presbyterian College for Women, So. Carolina, (1896-1902); and president of Converse College, So. Carolina, (1902-33), when he became emeritus.

Penner, Joe (Josef Pinter). American comedian, died in Philadelphia, Pa., Jan. 10, 1941; born near Budapest, Hungary, Nov. 11, 1904. Coming to the United States early in his youth, he did not achieve success until he appeared on the radio, as a guest of Rudy Vallee, in 1933. Soon after that he went to Hollywood, taking along his two famous gags "Wanna buy a duck?" and "You nasty man!" which became national sayings during the next few years, and appeared in *College Rhythm* (1934) and *Collegiate* (1935). More recently he appeared in *Mr. Doodle Kicks Off*, *The Day the Bookies Wept*, *Millionaire Playboy*, *Life of the Party*, and *I'm From the City*. In 1934 he was accorded the outstanding radio comedian of America; he continued on the radio until 1939. At his death he was playing the leading role in the musical comedy *Yokel Boy*, which was on tour.

Penniman, Josiah H(armar). American educator and writer; died in Philadelphia, Pa., Apr. 10, 1941; born in Concord, Mass., July 20, 1868. Receiving his education at the University of Pennsylvania (1890), he became professor of English literature there in 1896; dean of the faculty (1897-1909); vice prov-

ost (1911-20); and provost from 1923 to 1939. He served as president of the university from 1923 to 1926, when that office was abolished. Dr. Penniman was the author of *The War of the Theatres* (1897), *A Book About the English Bible* (1919), and was editor of Ben Jonson's *Poetaster* and Thomas Dekker's *Satiromastix*, of Belles Lettres Series (1905). He also wrote many articles on educational topics. In 1934 he received the cross of the French Legion of Honor in recognition of his services to French literature and Franco-American relations.

Peoples, Christian Joy. American naval officer; died in Washington, D. C., Feb. 3, 1941; born in Creston, Ia., Oct. 17, 1876. Appointed to the Supply Corps of the U.S. Navy in 1900, he rose through the grades to the rank of rear admiral in 1917. In 1933 he was made paymaster general and chief of the Bureau of Supplies and Accounts, and in that same year was ordered to further duty as Director of Procurement, Treasury Department. Relieved of his duties in Washington in 1939, Admiral Peoples served as General Director, Supply Corps, Pacific Coast, until his retirement in 1940.

Periere, Lothar von Arnauld de la. German naval officer; reported died by accident, although London believed he was killed in R.A.F. raid on Brest, Feb. 24, 1941; born in Posen, Germany, Mar. 18, 1886. Vice Admiral Periere, commander of the German naval forces in occupied France until his death, won the Medal Pour le Mérite, highest German war decoration, in World War I for being the commander of the U-35 and U-139, which were responsible for the sinking of 200 ships totaling more than 500,000 tons.

Perry, Roland Hinton. American sculptor and portrait painter; died in New York City, Oct. 27, 1941; born in New York City, Jan. 25, 1870. His best known work was the *Fountain of Neptune* in the Library of Congress, 1897; his bas-reliefs of Sybils in the same building are also well known.

Peters, Le Roy Samuel. American tuberculosis specialist, died in Albuquerque, N.M., Dec. 17, 1941; born in St. Joseph, Mich., Apr. 6, 1882. Dr. Peters was associate medical director of the Cottage Sanatorium, Silver City, N.M., in 1909-13, and in 1913-17 at the Albuquerque Sanatorium. In 1917-25 he served as medical director of the St. Joseph Sanatorium at Albuquerque. Dr. Peters was president of the American Sanatorium during 1933-34, president of the Southwestern Medical Society in 1938, and a past director of the National Tuberculosis Association. He specialized in the pneumo-thorax method of the treatment of tuberculosis.

Phelan, Michael (Francis). American Democratic Congressman from Massachusetts (1913-21); died in Lynn, Mass., Oct. 12, 1941; born in Lynn, Oct. 22, 1875. As chairman of the House Banking and Currency Committee he assisted in framing the Federal Reserve Act (1913).

Phillips, Sir Tom Spencer Vaughan. British naval officer, Lord Commissioner of the Admiralty and Vice Chief of Naval Staff since 1939, and Commander in Chief of the British naval forces in the Orient since Dec. 1, 1941; died in the wreckage of the battleship, *Prince of Wales*, as she was sunk off Malaya (Dec. 10, 1941) by Japanese torpedo and bombing planes; born, 1889. Entering the British Navy in 1903, he rose to a commander in 1921, and to a captain in 1927. Admiral Phillips served in World War I (1917) as an acting captain. He served on the Permanent Advisory Commission for Naval, Military, and Air Questions, Geneva (1920-22); was Assistant Director of Plans, Admiralty (1930-32); chief of staff and flag captain to Commander in Chief, East Indies (1932-35); Director of Plans

(1935-38); and Commodore Commanding the Home Fleet Destroyer Flotillas (1938-39).

Picard, Emile. French mathematician; died in Paris, France, Dec. 12, 1941; born in Paris, 1856. A pioneer in the study of algebraic functions of two variables, he had been a professor at the University of Paris since 1886, member of the Academy of Sciences since 1889, permanent secretary of the Academy for Mathematical Sciences since 1917, and member of the French Academy since 1924. In 1899 he was a guest lecturer at Clark University, Worcester, Mass. Professor Picard's publications include *Traité d'analyse* (1893-1923), *Théorie des fonctions algébriques* (1897-1906), *Réflexions sur la mécanique* (1902), *Pascal mathématicien* (1924), *Equations fonctionnelles* (1929), and *Notices et Discours* (1936).

Pick, Frank. British transit expert, director general of the British Ministry of Information from Aug. 7, 1940 to Dec. 13, 1940; died in London, Eng., Nov. 7, 1941; born at Spalding, Lines, Eng., Nov. 23, 1878. As vice chairman and member of the London Passenger Transport Board from 1933 to 1940, he directed the removal of refugees from London during the early months of the war.

Pilcher, Lewis Frederick. American architect; died in Philadelphia, Pa., June 15, 1941; born in Brooklyn, N.Y., in 1877. A graduate of Columbia University School of Architecture (1895), he served as State Architect and Commissioner of Sites in New York (1913-23); consulting architect to the U.S. Veterans' Bureau (1923-25); vice dean of the School of Fine Arts, University of Pennsylvania (1926-29); professor of Architecture, Pennsylvania State College (1929-37); also administrator PWA school program, Department of Public Instruction, Pennsylvania (1935).

While New York State Architect, he designed six buildings at Sing Sing Prison, for which, perhaps, he is best known. In this work he employed his ideas on modern prison construction, and provided for sanitary, humane, ventilated, and well-lighted cells in all the buildings. He was the author of *Historic Types of Architecture*; American editor in architecture for *Allgemeines Lexikon Bildenden Künster*; and editor in architecture for *The Encyclopedia Americana*.

Plaskett, John Stanley. Canadian astronomer, discoverer in 1922 of the Plaskett double star, one of the largest stars known; died in Esquimalt, British Columbia, Canada, Oct. 17, 1941. One of the world's prominent astronomers, he gave science its most accurate information on the question of rotation of the galaxy, and was notable for his advanced work in instrumental design, including the development of the stellar spectroscope. He was awarded the gold medal of the Royal Astronomical Society of Great Britain in 1930 for "valuable observations of stellar radial velocities and important conclusions derived from these observations." He also received the Royal Society of Canada Flavelle Medal for outstanding achievements in the field of astronomy in 1932, the Rumford Medal of the American Academy of Arts and Sciences for his spectra research, 1930, the Catherine Wolfe Bruce Medal of the Pacific Astronomical Society, 1932, and others. His principal papers include *Star Image in Spectroscopic Work*, *Diffuse Matter in Inter-Stellar Space*, *Rotation of the Galaxy*, and *The Dimensions and Structures of the Galaxy*.

Porter, Edwin S. American motion picture pioneer, associated with the late Thomas A. Edison in the development and early use of motion-picture projectors; died in New York, N.Y., Apr. 30, 1941; born in Pittsburgh, Pa., 1870. In 1903 he produced

The Great Train Robbery, the most popular of early pictures, others followed including *Sold*, with Pauline Frederick, *The Dictator*, with John Barrymore, and *Tess of the Storm Country*, with Mary Pickford.

Portney, Jan K. Polish Jewish leader; died in New York, N.Y., Sept. 27, 1941. Refugee president of the Jewish Socialist party (The Bund) of Poland, he was one of the prominent leaders and founders of the Jewish labor movement in Poland.

Pourtalès, Guy de. French author; died in Montana, Switzerland, June 14, 1941; born in France, 1884. The author of many books, including the biographies of the composers Liszt, Chopin, and Richard Wagner, and translator of Shakespeare, he won the grand prize of the French Academy and the Hememant Prize in England for his *Shadows Around the Lake (La pêche miraculeuse)*, published in 1937.

Power, Sir D'Arcy. British surgeon and writer; died in Middle Essex, Eng., May 18, 1941; born in London, Nov. 11, 1855. A Fellow of the Royal College of Surgeons since 1883, he was an examiner in surgery, Royal Army Medical Corps, and at the Universities of Cambridge, Oxford, Durham, Belfast, and at the National University of Ireland and the Royal College of Surgeons, England; was visiting lecturer at Johns Hopkins University (Baltimore) in 1931-32, and consulting surgeon and archivist at St. Bartholomew's Hospital, London. His publications included contributions on war surgery, syphilis, cancer, intestinal obstruction, the surgical diseases of children, and the history of medicine, in addition to *Selected Writings* (1931), and *A Mirror for Surgeons* (1940).

Prajadhipok, Somsach Chao Fa. King of Siam, 1925-35; died in Surrey, Eng., May 31, 1941; born in Siam, Nov. 8, 1893. He was the seventh monarch—one of the last three remaining absolute monarchs in the world—of the Chakkri dynasty, and ascended the throne on Nov. 26, 1925. Best known in the United States for his visit to this country (1931) for the removal of cataracts in his eyes, he was received at the White House by President Hoover.

The absence of King Prajadhipok from his country at crucial governmental crisis, necessitated by his health, gave enterprising men at home an opportunity to force through legislation with which the King differed, and rather than accept the situation, he abdicated on Mar. 2, 1935. Thereafter he lived in England.

Prévost, Marcel. French novelist, died in Vianne, France, Apr. 8, 1941; born in Paris, May 1, 1862. Member of the French Academy since 1909, and founder (1921) and director of *Revue de France*, he enjoyed an unrivaled reputation for the understanding of feminine psychology. His book *Lettres des Femmes*, published in 1892, a collection of letters in which the thoughts and desires of women were described, won wide popularity; and its successor *Les Demi-Vierges* (1894) gained immense vogue. Others of his better known works are *Le Scorpion* (1887), *Lettres à Françoise* (1902), *Les Anges gardiens* (1913), *La Retraite ardente* (1927), and *L'Homme vierge* (1930).

Purvis, Arthur Blaikie. British industrialist; died in a flying accident somewhere in the United Kingdom, announced Aug. 14, 1941; born in London, Eng., Mar. 31, 1890. President and managing director of Canadian Industries, Ltd., manufacturers of chemicals, Montreal, since 1925, he was appointed director general of the British Purchasing Commission in the United States, and chairman of the Anglo-French Purchasing Board in 1939, and as such was responsible, in his first six months in of-

rice, for the \$200,000,000 worth of Allied planes and motors bought through his office. Early in 1941 he became head of the British Supply Council in North America, an organization set up to direct the work of the purchasing commission and to "deal with all issues of policy concerning supply, including representations to be made to the United States Administration."

Guidde, Ludwig. German historian and pacifist; died in Geneva, Switzerland, Mar. 6, 1941; born in Bremen, Germany, 1858. In 1889, through his study of the history of the Reichstag, he founded the *German Historical Review*. Entering German politics (1893), he proceeded to attack Kaiser Wilhelm II bitterly in books and speeches. Due to his adherence to pacifism, he was forced into exile, removing to Switzerland, where he remained until after the war. He then returned to Germany, where in 1927 he was awarded the Nobel Peace Prize. He had been a member of the International Peace Bureau at Geneva for forty years.

Ramirez, Salvador C. Nicaraguan diplomat and educator, former Minister of Foreign Affairs and Minister to Mexico (1933); died in Salvador, Nicaragua, Dec. 26, 1941, born, 1877. Dr. Ramirez, the author of several books, was at one time presidential candidate of the Progressive Conservative Party.

Rand, Ellen Emmet (Mrs. William Blanchard Rand). American portrait artist; died in New York City, Dec. 18, 1941; born in San Francisco, Calif., Mar. 4, 1876. Her best known portraits are those of Augustus Saint-Gaudens and Benjamin Altman, both displayed in the Metropolitan Museum of Art, New York. In 1933-34 she painted the official White House portrait of President Franklin D. Roosevelt.

Ransley, Harry C. American Republican Congressman from Pennsylvania (1921-37); died in Philadelphia, Nov. 5, 1941; born in Philadelphia, Feb. 5, 1863.

Reed, James. American construction engineer, president of the Cramp Shipbuilding Co.; died in Philadelphia, Pa., July 23, 1941; born in Ashtabula, O., 1882. As general manager of the Golden Gate Bridge and Highway District in San Francisco (1933-37), he was in charge of the engineering, finance, and construction of the suspension bridge across the Golden Gate.

Reid, Helen Richmond (Young). Canadian writer and social worker; died in Montreal, Canada, June 8, 1941; born in Montreal, 1869. President and co-founder of the Montreal Charity Organization Society (1900) and director of the Patriotic Fund in Montreal during the World War, she was awarded the Jubilee Medal (1935) and the Coronation Medal (1937) for her educational and philanthropic work.

Rennell, 1st Baron, James Rennell Rodd. British diplomat; died in Surrey, Eng., July 26, 1941; born Nov. 9, 1858. The last of British ambassadors of the era before the World War, he served as minister to Sweden (1904-08); ambassador to Italy (1908-19); and Conservative member of Parliament (1928-32). He was a delegate to the League of Nations in 1921 and 1923, and in 1925 headed the Court of Conciliation between Austria and Switzerland. His writings include three series of diplomatic memoirs *Social and Diplomatic Memoirs* (1922), second series (1894-1901; 1923), third series (1926).

Richards, C(harles) R(uss). American educator; died in Minneapolis, Minn., Apr. 17, 1941; born in Clarksville, Ind., Mar. 23, 1871. Receiving his master's degree from Purdue University, he became an instructor at Colorado Agricultural College (1891); went to University of Nebraska (1892-1911); Uni-

versity of Illinois (1912-22); became president of Lehigh University in 1923, and retired as emeritus in 1935.

Richards, John G(ardiner). American ex-governor; died in Liberty Hills, S.C., Oct. 9, 1941; born in Liberty Hills, Sept. 11, 1864. He ran unsuccessfully for Governor in 1910, 1914, and 1918, he achieved his ambition in 1926, serving as Governor of South Carolina during 1927-31. His administration was marked by his efforts to enforce the State's blue laws, particularly against Sunday golf and Sunday gasoline sales. Since 1935 he had been a member of the State Tax Commission.

Rickert, Thomas A. American labor leader, president of the United Garment Workers of America since 1904; died in New York, N.Y., July 28, 1941; born in Chicago, Apr. 24, 1876. He had been second vice-president of the American Federation of Labor since 1931.

Riddle, John Wallace. American diplomat; died in Farmington, Conn., Dec. 8, 1941; born in Philadelphia, July 12, 1864. Graduating from Harvard (1887), he entered the U.S. diplomatic service in 1893, serving as secretary of the legation to Turkey (1893-1900); secretary of the American Embassy in Russia (1901-03), diplomatic agent and consul-general to Egypt (1903-05); Envoy Extraordinary and Minister Plenipotentiary to Rumania and Serbia (1905-06); Ambassador to Russia (1906-09); and Ambassador to Argentina (1921-25). He resigned from the diplomatic service in 1925.

Ridge, Lola. American poet; died in Brooklyn, N.Y., May 19, 1941; born in Dublin, Ireland, in 1883. Coming to the United States in 1907, she assisted Alfred Kreyborg in editing *Others*, a magazine for experimental poetry, and later assumed complete editorial responsibility. She became favorably known for her radical poetry published in the *New Republic*, and for her first novel, *The Ghetto and Other Poems* (1918). In 1929 she was credited with having written one of the most extraordinary poems ever composed by an American—*Firehead*, dealing with the Crucifixion. Other works are *Sun-up and Other Poems* (1920), *Red Flag* (1927), and *Dance of Fire* (1935).

Ripley, William Z(ebina). American economist and educator; died in East Edgecomb, Me., Aug. 16, 1941; born in Medford, Mass., Oct. 13, 1867. Educated at Massachusetts Institute of Technology (A.B., 1890) and at Columbia University (1892-93), he was professor of economics at M.I.T. (1895-1901); and professor of political economy at Harvard (1901-33). In 1918 he was director of Labor Standards for the War Department; from 1920 to 1922 was special examiner for the Interstate Commerce Commission in proceedings toward a merger of the nation's railroads, and was chairman of the National Adjustment Commission of the U.S. Shipping Board (1919-20). A nationally known authority on railroad transportation, he also crusaded against secrecy in the accounts of large corporations and trusts, demanding equality for non-voting shareholders. His publications include *Trusts, Pools and Corporations* (1905), *Railway Problems* (1907), *Railroads—Finance and Organization* (1914), and *Main Street and Wall Street* (1927).

Risquez, Francisco Antonio. Venezuelan physician, surgeon, and educator; died in Caracas, Venezuela, July 10, 1941, born in State of Nueva Esparta, Oct. 10, 1856. Among the many positions he held were: member of the Board of Hygiene and Public Health of the Federal District (1899); delegate to the International Congress of Medicine, Paris (1900); Venezuelan Consul in Spain and subsequently chargé d'affaires (1901-10); president of the Com-

mittee on Health of the Congress of Municipalities in Caracas (1911); president of the 1st District Council of Public Education, Caracas (1912); delegate to the Pan-American Medical Congress, Havana, Cuba (1927); and first vice-president of the organizing committee for Pan-American Medical Congress (1934). Included among his publications were *Lecciones de cirugía general* (1891), *Manual de medicina legal* (1901), *Estudios higiénicos* (1909), *Discursos y conferencias* (1926), *Higiene militar* (1926), and *Patología interna* (1938).

Roberts, Elizabeth Madox. American poet and author; died in Orlando, Fla., Mar. 13, 1941; born near Springfield, Ky., in 1886. A graduate of the University of Chicago (1921), she was the recipient of the John Reed Memorial Prize (1928), the O. Henry Memorial Prize for a short story (1930), and a prize awarded by the Poetry Society of South Carolina (1931). Among her best known works are *The Time of Man* (1926), *The Great Meadow* (1930), and *Song of the Meadow* (1940). Her more recent novels were *He Sent Forth a Raven* (1935), *Black is My Truelove's Hair* (1938), and *Not by Strange Gods* (1941).

Roberts, Frederick Owen. British Member of Parliament from 1918 to 1931 and again from 1935 to early in 1941; died in Northampton, Eng., Oct. 24, 1941; born in East Haddon, Northants, Eng., 1876. Sir Roberts was Minister of Pensions in 1924 and again during 1929-31.

Roberts, Stewart Ralph. American physician and educator; died in Atlanta, Ga., Apr. 14, 1941; born in Oxford, Ga., Oct. 2, 1878. Graduating from Emory University (1902) and receiving his medical degree from the Atlanta College of Physicians and Surgeons, he was professor of biology at Emory College (1902-06); professor of physiology, Atlanta School of Medicine (1906-09); professor of physiology (1909-10), associate professor of medicine (1910-13), professor (1913-15), and professor of clinical medicine since 1919 at the Atlanta Medical College (Emory College). Dr. Roberts was one of the ten American physicians appointed by the Secretary of Labor to study and advise on the question of governmental supervision of medical care (1934).

Roberts, William Carman. American editor; died in Waterford, Conn., Nov. 21, 1941; born in Fredericton, Canada, 1875. Associated with *The Literary Digest*, which discontinued publication in May, 1938, since 1898, he was managing editor of the magazine during 1932-34.

Robinson, Frederick Bertrand. American educator; died in New York, N.Y., Oct. 19, 1941; born in Brooklyn, N.Y., Oct. 16, 1883. He had been associated with the College of the City of New York since 1906 as tutor, instructor, assistant professor, associate professor, and professor; director of the student evening session, 1915-27, organized and directed the Division of Vocational Subjects and Civic Administration until 1927, acting president of the college, 1925-26, and president from 1927 to 1939.

Rockley, Baroness (Alicia Margaret). British horticulturist and writer; died at Lytchett Heath Poole, Eng., Sept. 13, 1941. Honorary assistant director of horticulture of the food production department of the Board of Trade during the World War, she wrote for many years on gardening and wild flowers throughout the British Empire. Her publications include *A History of Gardening in England* (1895), *Children's Gardens* (1902), *Wild Flowers of the Great Dominions of the British Empire* (1935), and *Historic Gardens of England* (1938).

Rockley, 1st Baron, Evelyn Cecil. British politician; died in Poole, Dorset, Eng., Apr. 1, 1941; born,

May 30, 1865. He was a member of Parliament from East Herts (1898-1900); from Aston Manor (1900-18); and from Birkenham (1918-29). His publications included *Primogeniture* (1895), and *On the Eve of War* (1900).

Rogers, Mark Homer. American orthopedist, assistant professor from 1915 to 1924 and thereafter professor of orthopedic surgery at Tufts Medical School, Medford, Mass.; died in Boston, Mass., Oct. 5, 1941; born in South Sudbury, Mass., May 21, 1877.

Roosevelt, Philip J(ames). American investment banker and yachtsman; died after his sailing dinghy capsized in Oyster Bay, Long Island, New York, Nov. 8, 1941; born in New York City, May 15, 1892. A cousin of the late Theodore Roosevelt, he was a partner in Roosevelt & Son, investment bankers, New York, and an executive or director of numerous corporations. As one of the nation's noted yachtsmen, he had been president for the last six years of the North American Yacht Racing Union, the ruling body of sail racing in the United States and Canada. He had taken part in races of the British-American cup team and the Scandinavian American match on Long Island Sound, New York (1930). In World War I he served as a major in the U.S. Air Service, receiving the Croix de Guerre with palm (France).

Roosevelt, Sara Delano. Mother of President Franklin D. Roosevelt; died at Hyde Park, N.Y., Sept. 7, 1941; born in Newburgh, N.Y., Sept. 21, 1854.

Rose, Mary D. Swartz (Mrs. Anton Richard Rose). American educator and nutrition expert, died in Edgewater, N.J., Feb. 1, 1941; born in Newark, O., Oct. 31, 1874. A graduate of Denison University (1902) and Yale University (1909), she became instructor (1909-11), assistant professor (1910-18), associate professor (1918-21), and since 1921 professor of nutrition, Teachers College, Columbia University. She had been a member of the Council on Foods of the American Medical Association since 1933 and since 1935 a member of the Nutrition Commission of the Health Organization of the League of Nations. Dr. Rose was president of the American Institute of Nutrition, 1937-38. Her publications included: *Laboratory Handbook for Diets* (1912), *Feeding the Family* (1916), *Everyday Foods in War Time* (1918), *Foundations of Nutrition* (1927), and *Teaching Nutrition to Boys and Girls* (1932).

Rourke, Constance Mayfield. American author and educator; died in Grand Rapids, Mich., Mar. 23, 1941; born in Cleveland, O., Nov. 14, 1885. Graduating from Vassar College in 1907, she returned there as an instructor in English (1910-15), thereafter devoting her time to writing. Her book, *American Humor—A Study of the National Character*, was adjudged one of the 15 best books of 1931 and one of the most outstanding written by a woman in the last 100 years; *Audubon* (1936) is considered one of the finest biographies of the Naturalist yet written. Among her other publications were: *Trumpets of Jubilee* (1927), *Troupers of the Gold Coast, or the Rise of Lotta Crabtree* (1928), *Davy Crockett* (1934), and *Charles Sheller: Artist in the American Tradition* (1938).

Rousseau, Paul (Maurice Lombard). French sportsman and for many years actual dictator of European boxing in his position as secretary general of the International Boxing Union; died in Vichy, France, May 5, 1941; born in Bordeaux, France, Mar. 22, 1868. At the age of 20 he won the French junior amateur cycling championship.

Rowell, Newton Wesley. Canadian diplomat and lawyer; died in Toronto, Canada, Nov. 22, 1941;

born in Middlesex Co., Ontario, Nov. 1, 1867. Chief Justice of Ontario in 1936-38, he served, during the World War I, as president of the Union Government Council and as vice chairman of the Cabinet's War Committee under Sir Robert Borden, then Prime Minister. He was Acting Secretary of State for External Affairs in 1920-21.

Rumbold, 9th Baronet of, Horace George Montagu. British diplomat, died at Tisbury, Wiltshire, Eng., May 24, 1941; born, Feb. 5, 1869. He served as British Minister to Switzerland (1916-19), Minister to Poland (1919-20), Ambassador to Turkey (1920-24), Ambassador to Spain (1924-28), and Ambassador to Berlin (1928-33). Sir Horace was one of the first British officials to warn England of Herr Hitler. In a dispatch from Germany in April, 1933, he said, "Herr Hitler has now been Chancellor for nearly five months, and the prospect is disquieting, as the only program which the government appears to possess may be described as a revival of militarism and the stamping out of pacifism." He wrote *The War Crisis in Berlin, July-August, 1914* (1940).

Russell, Charles Edward. American journalist and author, died in Washington, D.C., Apr. 23, 1941; born in Davenport, Ia., Sept. 25, 1860. After graduating from St. Johnsbury Academy, Vermont, in 1881, he was engaged by numerous newspapers before becoming city editor of the *New York World* (1894-97). From *The World* he became managing editor of the *New York American* (1897-99), publisher of the *Chicago American* 1900-02; and since 1904 contributor to magazines and lecturer on literature and sociology. He became a Socialist in 1908, and was Socialist candidate for Governor of New York in 1910 and 1912; for Mayor of New York City (1913), for U. S. Senator (1914); and was nominated (1916) by party plebiscite for president, but declined. In 1903 he joined the muck-rakers, whose general purpose was the exposure of political, economic and social corruption; Russell specialized against corporations. As an author, he wrote 34 books, and won the Pulitzer Prize (1927), for his *The American Orchestra and Theodore Thomas*, a biography.

Russell, Elizabeth Mary, Countess. British novelist; died in Charleston, S.C., Feb. 9, 1941, born in Sydney, Australia, 1867. In 1898 she wrote an autobiographical novel in diary form, *Elizabeth and her German Garden*, under the pseudonym Elizabeth, and continued to write under that name until her death. Lady Russell's first books were noted for their charm and love of nature, but showed the beginnings of the brilliant and yet merciless cynicism of her later books. Among her publications were *The Adventures of Elizabeth in Ruegen* (1904), *The Caravaners* (1909), *Priscilla Runs Away* (1910), *Vera* (1921), *The Enchanted April* (1923), *Expiation* (1929), and *Mr. Skeffington* (1940).

Sabatier, Paul. French chemist; died at Toulouse, France, Aug. 14, 1941; born at Carcassonne, France, 1854. Professor of chemistry at Toulouse University since 1882 and dean of the faculty of sciences since 1905, he was noted for his discovery of a successful method of fat-hardening, or hydrogenation, and for his experiments leading to the discovery of synthetic gasoline. In 1912 he was co-holder of the Nobel Prize in chemistry. He received the Benjamin Franklin Medal of the Franklin Institute, of Philadelphia, in 1933. Among his publications were: *Travaux de chimie, Leçons de chimie agricole*, and *Les phénomènes de catalyse et de synthèse organique par hydrogénation ou déshydrogénation*.

Sackett, Frederic Moseley, Jr. American politician

and diplomat; died in Baltimore, Md., May 18, 1941; born in Providence, R.I., Dec. 17, 1868. He was elected to the U.S. Senate (Rep.) from Kentucky in 1924, resigning in 1930 to accept President Hoover's appointment as Ambassador to Germany (1930-33).

Sáenz, Moisés. Mexican educator and diplomat; died in Lima, Peru, Oct. 24, 1941; born in Monterrey, Mexico, Feb. 16, 1888. Under-Secretary of the Department of Education of Mexico from 1925 to 1930, he helped to establish thousands of public schools throughout the country. He sought to improve relations with the United States, introducing into the Mexican schools (1929) ten lessons on international good-will. Extremely active in the interests of Mexico's Indians, he devoted many years to solving problems interfering with the integration of the Mexican people, believing that education for the Indians was of fundamental necessity to accomplish this unity. He was appointed Minister to Ecuador, 1934, to Denmark, 1935, and to Peru since 1936.

St. Just, 1st Baron, Edward Charles Grenfell. British financier; died in London, Eng., Nov. 28, 1941; born, May 29, 1870. Lord St. Just had been a partner in the banking firm of Morgan, Grenfell & Co., Ltd., of London, since 1904, and at his death was senior director of the firm. He was a Conservative Member of Parliament during 1922-35.

Sakatani, Yoshiro. Japanese statesman; died in Tokyo, Japan, Nov. 14, 1941; born in Tokyo, May 15, 1889. A member of the House of Peers, an advocate of Japanese-American friendship, and adjudged one of the foremost financiers and economists in Japan, Viscount Sakatani was Minister of Finance, 1906-08, Mayor of Tokyo, 1912-15, and fiscal advisor to China, 1917. A former president of Senshu University, he served as chairman of the Japanese delegation to the economic conference of the Allies in Paris during the World War.

Salmon, Sir Isidore. British restaurateur; died in London, Eng., Sept. 16, 1941, born, February, 1876. Chairman and managing director of J. Lyons & Co., proprietors of a large restaurant chain and three London hotels, he had been a Conservative member of Parliament since 1924. He was chairman of the London War Pensions Committee from 1918 to 1922, member of the Royal Commission on Transport during 1928-30, and, at his death, Honorable Advisor on Catering to the British Army.

Sanborn, (John) Pitts. American music critic and novelist; died in New York, N.Y., Mar. 7, 1941; born in Port Huron, Mich., 1880. Graduating from Harvard University with a masters degree in 1902, he became music editor of *The New York Globe* (1905-23), served as foreign correspondent for the paper during the summers of 1912-22 with the exception of 1913, 1917, and 1918; music editor of *The New York Evening Mail*, retaining the post when the paper was merged with *The New York Evening Telegram* (1923 to his death). He was the author of *Prima Donna* (1929), *Vie de Bordeaux* (1917), *Greek Night* (1933), and *Metropolitan Book of the Opera* (1937).

Sanders, Archie D. American Republican Congressman from New York (1917-32); died in Rochester, N.Y., July 15, 1941; born in Stafford, N.Y., June 17, 1857.

Sanders, William Stephen. British laborite, founder of the Battersea Trades Labor Council (1893), and during 1929-31, 1935-40 Labor member of Parliament from North Battersea; author of *Political Reorganization of the People*, and *Early Socialist Days*; died in Wandsworth, Eng., Feb. 4, 1941; born, January, 1871.

Saunders, Peggy (Mrs. L. R. C. Mitchell). British tennis player; died in Edgeware, Eng., June 21, 1941; born, 1905. Twice co-holder of the British women's doubles championship, she was a member of the British Wightman Cup team from 1928 to 1933.

Schaerer, Eduardo. Paraguayan statesman, President of Paraguay from 1912 to 1916; died in Buenos Aires, Argentina, Nov. 12, 1941; born in Caazapa, Paraguay, Dec. 2, 1873. He had been Minister of the Interior, 1912, and a Senator during 1918-22. In 1931 he was deported, accused of supporting a revolutionary movement.

Schertzinger, Victor. American composer and motion picture director; died in Hollywood, Calif., Oct. 26, 1941; born in Pennsylvania, 1889. One of the first to establish screen musicals as a popular form of screen entertainment, he directed such screen hits as *Love Me Tonight*, *Rhythm on the River*, *Kiss the Boys Goodbye*, *The Road to Singapore*, *The Road to Zanzibar*, and *Birth of the Blues*. His most famous composition was *Marcheta*, which sold more than 4,000,000 copies.

Schmidt-Degener, Frederick. Dutch art expert; died in Amsterdam, Holland, Nov. 21, 1941; born, 1882. Director of the Rijksmuseum in Amsterdam since 1922, he was an authority on Rembrandt's works. Under his care were collections of the original work of Frans Hals, Rembrandt, and Josef Israels.

Schoonheimer, Rudolf. American chemist; died in Yonkers, N.Y., Sept. 11, 1941; born, 1898. An outstanding research worker in the field of biochemistry, he was graduated from the University of Berlin (1922); was a former head of the department of pathological chemistry at the University of Freiburg; was a Douglas Smith Fellow in the department of experimental surgery at the University of Chicago (1930-31), and in 1933 came to Columbia University, where he was associate professor of biological chemistry at his death.

He was a forerunner in the field of "tagged atoms," in which "atoms of heavy hydrogen, heavy nitrogen, as well as heavy carbon, oxygen, and sulphur are introduced in the diet of animals to determine the uses the animal body makes of food constituents. His work at Columbia helped to discover that the human body is a chemical laboratory where diversified transformations of matter are occurring frequently.

Schulte, Karl Josef. German Catholic Cardinal; died in Cologne, Germany, Mar. 11, 1941; born in Valbert, Westphalia, Sept. 14, 1871. A militant crusader against the authority and philosophy of the Nazi regime, he was Archbishop of Cologne since 1920; editor of *Bischofliche Hirtenbriefe* since 1910; and was elevated to the College of Cardinals in 1921.

Scribner, Sam A. American theatrical producer, treasurer of the Actors Fund of America since 1916; died in the Bronx, New York, N.Y., July 8, 1941; born in Brookville, Pa., 1859.

Severance, H. Craig. American architect; died in Point Pleasant, N.J., Sept. 2, 1941; born in Chazy, N.Y., July 1, 1879. Active as an architect for 41 years, he designed, among others, the Bank of the Manhattan Company Building, the Ruppert Building, Prudence Building, Bar Building, Hotel Taft, and Nelson Towers, all in New York. In 1918 he surveyed the devastated areas in France and Belgium for the United States to inaugurate a program of rehabilitation.

Shannon, Peggy. American screen actress and former Ziegfeld Follies girl, she attained stardom in pictures during the 1930's; died in Hollywood, Calif., May 11, 1941; born in Pine Bluff, Ark., Jan. 10, 1910.

Shawkey, Morris P(urdy). American educator; died on a railroad train in Georgia, Feb. 6, 1941; born, Sigel, Pa., Feb. 17, 1868. A graduate of Ohio Wesleyan University (1909), he became State Superintendent of Schools in West Virginia (1908-20); ran for Republican Governor in 1920, but was defeated; and in 1923 became president of Marshall College. Under his leadership the College increased its registration from 1,000 to 2,000 students. In 1935, when he retired, he was designated as president emeritus. At his death, he was business manager of Morris Harvey College, an institution supported by the Methodist Church.

Shearer, Augustus H(unt). American librarian in charge of the Buffalo (N.Y.) Grosvenor Reference Library and its 350,000 volumes since 1919; died in Buffalo, N.Y., May 31, 1941; born in Philadelphia, Pa., Feb. 21, 1878. He was president of the Bibliographical Society of America in 1933. He was co-author of a *Guide to Historical Literature* (1931), and *History of New York* (1933).

Sheppard, Morris. U.S. senator (Dem.); died in Washington, D.C., Apr. 9, 1941; born in Wheatville, Morris Co., Tex., May 28, 1875. Graduated from the University of Texas (1895) and the Yale Law School (1898). Sheppard began his law practice in Pittsburg, Texas, and then, a year later, located at Texarkana, which he called home until his death.

In 1902, the young lawyer was elected to the 57th Congress to fill out the unexpired term of his father, who had died. He was reelected to five Congresses, from the 58th to the 62d, 1903 to 1913, and on Mar. 3, 1913, was elected by the Legislature as U.S. Senator for the unexpired term, ending in 1913, of Joseph W. Bailey, who had resigned. On the same day Senator Sheppard was also elected for the full term in the Senate, beginning in March, 1913, and was reelected in 1918, 1924, 1930, and 1936.

Dean of Congress in length of service and the sponsor of the national prohibition amendment to the Constitution, Senator Sheppard was a Dry politically and personally. He opposed the nomination of Franklin D. Roosevelt as late as 1931 because of Mr. Roosevelt's advocacy of repeal. He was co-author of the Sheppard-Towner act, which provided Federal aid to the states for maternity and infancy care; chairman, Senate Military Affairs Committee (at his death); was one of the pilots of the Selective Service Act, and opened debate on the bill on the Senate floor in August, 1940, appealing for its passage as essential to the protection of the nation against "dictator controlled" countries. One of his last steps, early in 1941, was to introduce in the Senate a bill to prevent the sale of liquor or beer to members of the Army and Navy, under penalties of fines from \$100 to \$1,000 and jail terms from a month to a year.

Sherley, (Joseph) Swager. American ex-congressman (Dem.); died in Louisville, Ky., Feb. 13, 1941; born in Louisville, Nov. 28, 1871. Serving in Congress as a Representative from Kentucky (1903-1919), he was a close advisor of President F. D. Roosevelt in 1933 on the President's plan for reorganization of the Federal government.

Shuman, Edwin Llewellyn. American editor and writer; died in Yonkers, N.Y., Dec. 13, 1941; born in Lancaster Co., Pa., 1864. Graduated from Northwestern University in 1887, he became a reporter for *The Chicago Journal*. In 1895 he joined the staff of *The Chicago Tribune* as literary editor and editorial writer, and in 1900 moved over to *The Chicago Record* as literary editor, a post he held until 1913. In 1915 he came to New York as

assistant general manager of Associated Sunday Magazines. In 1916 he became managing editor of *Current History Magazine*, and in 1922 was appointed associate editor of the *International Book Review*. When that magazine became defunct in 1926, he moved on to the associate editorship of *The Homiletic Review*. He was the author of *Steps into Journalism* and *How to Judge a Book*. He edited *A Decade of Oratory* and translated *Trail Blazers of Science* from the German.

Sikes, Enoch Walter. American educator; died in Charleston, S.C., Jan. 8, 1941; born in Union Co., N.C., May 19, 1868. A teacher since 1891, he held numerous positions; becoming president of Clemson College, So. Carolina, in 1916. He retired in 1925. Also he was the author of many books concerning the history of the Carolinas, including *From Colony to Commonwealth* (1897).

Simpson, Kenneth F(arrand). American Congressman; died in New York, N.Y., Jan. 25, 1941; born in New York City, May 4, 1895. He graduated from Yale University in 1917; entered politics, and subsequently became Republican County Chairman in New York City (1933-40); and Republican Representative to Congress since November, 1940. He was largely responsible for the reelection of Mayor Fiorello H. LaGuardia in New York City (1937), and for the nomination of Wendell Willkie for President at the Republican National Convention (1940). Shortly before his death he introduced in the House of Representatives a substitute bill for the administration's Lend-Lease Bill.

Sinding, Christian. Norwegian composer; died in Oslo, Norway, Dec. 3, 1941; born in Kingsberg, Norway, 1856. Credited with having introduced a new fashion for Norwegian music with his piano quintette in E minor, Sinding was the composer of, among others, *The Rustle of Spring*, *The Rustle of the Forest*, *The Holy Mountain*, an opera, and *Episodes chevaleresques*. In addition, three symphonies, three sonatas, and more than 200 songs, principally Scandinavian folk songs. In 1920-21 Sinding taught music theory and composition in the Eastman School of Music of the University of Rochester, New York.

Sisowath Monivong. King of Cambodia Province, French Indo-China; died at Pnom-Penh, Cambodia, Apr. 24, 1941. Succeeding to the throne in 1927, he reigned merely as a puppet head, as Cambodia is a protectorate within French Indo-China. Like his ancestors, the monarch lived within a walled enclosure, served by several hundred women. A sad note entered his life in 1938—he was forced to fire 100 of his 200 wives.

Skelton, Oscar Douglas. Canadian diplomat; died in Ottawa, Can., Jan. 28, 1941; born in Orangeville, Ont., July 13, 1878. Canadian Under-Secretary of State for External Affairs since 1925, he wrote *Socialism, a Critical Analysis* (1910), *Economic History of Canada, since Confederation* (1913), *The Day of Sir Wilfrid Laurier* (1916), *Life and Times of Sir A. T. Galt* (1920), *Our Northern Neighbor* (1920), and *Life and Letters of Sir Wilfrid Laurier* (1921).

Skilton, Charles Sanford. American composer and organist; died in Lawrence, Kan., Mar. 12, 1941; born in Northampton, Mass., Aug. 16, 1868. A graduate of Yale University (1889), and professor of organ, theory of music, and history of music at the University of Kansas since 1903, he was noted for his Indian melodies, which were played abroad as well as in the United States. Among his outstanding compositions are *Electra* (1889), *Sonata for Violin and Piano* (1897), *The Witch's Daughter*, *Ticonderoga*, *The Guardian Angel*, and *Ameri-*

can Indian Fantasia. He wrote the operas *Kalopln*, *The Sun Bride*, and *The Day of Gayomair*.

Slade, George (Heron). American railway official; died in St. Paul, Minn., Jan. 24, 1941; born in New York, N.Y., July 22, 1871. A graduate of Yale (1893), he served as general superintendent of the Great Northern Railway Co. (1903-07); general manager of the Northern Pacific (1907-09), made first vice-president in charge of operations from 1913 to 1918, when he resigned to become director general of transportation for the A.E.F. in France, with the rank of colonel. He became a member of President Wilson's Second Industrial Conference (1920).

Smith, Albert Edwin. American educator and clergyman, president of Ohio Northern University from 1905 to 1930; died in Findlay, O., Aug. 26, 1941; born in New Richmond, O., Dec. 16, 1860. Ordained a Methodist Episcopal minister in 1887, he was a delegate to the Ecumenical Conference in London in 1923.

Smith, Preserved. American educator and writer; died in Louisville, Ky., May 15, 1941; born in Cincinnati, O., July 22, 1880. Graduating from Amherst College (1901), and Columbia University (1902), he began teaching at Williams College (1904), Amherst (1907), and in 1922 became a professor at Harvard, a position he held until his death. Dr. Smith was a contributor to the *NEW INTERNATIONAL ENCYCLOPEDIA*, in addition to many other publications in the United States and Europe. Other among his writings were: *Life and Letters of Martin Luther* (1911), second edition in 1914, *The Age of Reformation* (1920), *Erasmus—A Study of His Life, Ideals, and Place in History* (1923), *A Key to the Colloquies of Erasmus* (1923), and *A History of Modern Culture* (vol. 1, 1930—vol. 2, 1934).

Smith, William Ruthven. American major general; died in West Point, N.Y., July 15, 1941; born in Nashville, Tenn., Apr. 2, 1868. Superintendent of the U.S. Military Academy from 1928 to 1932, he waged a long campaign, but successful, for the purchase of 15,000 additional acres, maintaining that to adequately train cadets in modern warfare it was essential to have fine artillery and rifle ranges and a landing field for planes. A considerable building program was carried out under his plans and he was able to liberalize to some extent the rules and formalities of cadet training. This post was the last assignment in a career of 44 continuous years in the Army which included the command of the 36th Division in France during the World War and the command of the Hawaiian Department of the Army (1927).

Smoot, Reed. American ex-Senator. Died in St. Petersburg, Fla., Feb. 9, 1941; born in Salt Lake City, Utah, Jan. 10, 1862. Elected to the U.S. Senate in 1903, he almost lost his seat through the Senate's opposition to the Mormon church and the idea of polygamy. The dissension lasted for one year, and due solely to Senator Smoot's intense insistence that he did not practice polygamy, that his church vows did not interfere with the oath of office, was his election confirmed. He was re-elected in 1908, 1914, 1920, and 1926.

A firm advocate of economy, of conservative Republicanism and of a high tariff, he was co-author of the Smoot-Hawley tariff bill (1930), which, with highly increased rates, extended protection into the field of agricultural production—the bill contained some 21,000 items. He was an acknowledged expert on tariff taxation and public finance, and as such was so vigilantly a foe of those who sought to raid the Treasury that the sobriquets

"watch-dog of the Treasury" and "high priest of tariff protection" were attached to him. He served as chairman of the Senate Finance Committee, member of the World War Foreign Debt Committee, and member of the Republican National Committee (1912-20).

In the Roosevelt landslide of 1932 he was defeated and retired to Utah, again to become active in the Mormon Church; he had been a president of the Utah Stake of the Church of Jesus Christ of Latter Day Saints (Mormon) since 1895 and had become an apostle in 1900.

Soler y Guardilla, Pablo. Spanish diplomat; died in Tigre, Argentina, Nov. 9, 1941; born, 1865. He was a former Ambassador to Paraguay, Cuba, and Argentina.

Sombart, Werner. German educator, economist, and author; died in Berlin, May 18, 1941, born in 1863. He taught at the University of Breslau from 1890, at the Berlin Commercial College from 1906 and in 1917 was appointed professor at the University of Berlin. Dr. Sombart opposed Karl Marx on his fundamental conclusions on the origins of capitalism, making a new analysis in which he connected the development of capitalism with new religious impulses growing out of the Reformation, particularly Calvinism. Included among his writings were: *Socialism and the Socialist Movement in the 19th Century* (1896), *Modern Capitalism* (begun in 1902 and not finished until 1926), *The Jews in Economic Life*, and *The Proletariat*.

Speyer, James. American banker and philanthropist; died in New York City, Oct. 31, 1941, born in New York City, July 22, 1861. Senior partner of the banking house of Speyer & Co., New York, from 1899 to 1939, his philanthropies were many and varied. He was the leading figure in the promotion of the Museum of the City of New York, one of the originators (1894) of the Provident Loan Society of New York, and a contributor to and an active campaigner for the Salvation Army and the United Hospitals Fund. For his generosity in founding the University Settlement Society, Speyer School of Teachers College (Columbia University), Ellin Prince Speyer Hospital for Animals, and others, he was presented the gold medal of the Hundred Year Association (1938) as the man who had contributed most to the civic welfare of New York City.

Stang, Fredrik. Norwegian educator and jurist; died in Norway, Nov. 15, 1941, born, 1867. President of the Nobel Prize Committee since 1921, he served as a member of Parliament, 1906-09, and as Minister of Justice during 1912-13. Dr. Stang became a professor of Law at Oslo University in 1897, and was president of the university from 1921 to 1927. He was the founder and head of the Institute of Comparative Research in Human Culture at Oslo.

Stewart, Robert. British checkers champion; died at Blairadam, Fifeshire, Scotland, Aug. 11, 1941; born, 1873. Holder of the world's checker championship, he had lost only two games in a total of 8,000 played. One game was lost in a world's title match (1922), when he defeated Newell W. Banks of the United States by two games to one and made 37 draws; the other game was lost to an unknown. He was a member of the victorious British checker team which visited New York in 1905.

Stiles, Charles Wardell. American zoologist, discoverer of hookworm in the United States; died in Baltimore, Md., Jan. 23, 1941; born in Spring Valley, N.Y., May 5, 1867. He studied at Wesleyan University (1885-86) and then went to Europe for

graduate work at College de France (1886-87), University of Berlin (1887-89), and University of Leipzig (1889-90). He returned to this country to become consulting zoologist of the Bureau of Animal Industry, U.S. Department of Agriculture (1902-04); professor of zoology, U.S. Public Health Service (1902-30), assistant surgeon general (1919-30) and medical director during 1930-31; professor of medical zoology, Georgetown University (1892-1906), and lecturer at various other universities. Beginning in 1891, he studied to find a cure for the malady afflicting under-privileged groups in the South, but with all the progress he made towards proving that the hookworm was responsible for the nation's greatest scourge, he could obtain little help or money from the government or private sources. Nevertheless he persisted and in 1914, after having laid the groundwork for a system of education to prevent recurrences of the disease, after proving that all his original theories had come true, and after devoting a major portion of his life to this cause, he retired—to complete obscurity. He was the author of numerous books and articles on the hookworm and intestinal parasites.

Still, Sir George Frederic. British physician extraordinary to the King since 1937; died at Harnham Croft, Salisbury, Eng., June 30, 1941; born in Holloway, London, February, 1868. He was chairman of the National Association for the Prevention of Infant Mortality, 1917-37, and was awarded the Dawson Williams Memorial Prize, for work in behalf of sick children, in 1934.

Stillwell, Lewis Buckley. American electrical engineer; died in Baltimore, Md., Jan. 19, 1941; born in Scranton, Pa., Mar. 12, 1863. A graduate of Lehigh University in 1885, he joined the Westinghouse Electric and Manufacturing Co. (1886), and from 1891 to 1897 was chief electrical engineer. With Nikola Tesla he helped develop and commercialize the alternating current system of lighting and power distribution, and had an active part in the establishment of standard frequencies of 30 and 60 cycles. He was appointed electrical director of the Niagara Falls Power Co. (1897-1900), and in 1900 he became electrical director of the Rapid Transit Subway Construction Co., builders of the Interborough subway, New York City. He held this position until 1909, and then became consulting engineer to the Interborough Rapid Transit Co. (1909-20). As consulting engineer, he also served many other prominent railway and electric companies. His work brought him the Lamme Medal (1933) "for his distinguished career in connection with the design, installation and operation of electrical machinery and equipment," and the Edison Medal (1936).

Stolz, Joseph. American rabbi; died in Chicago, Feb. 7, 1941; born in Syracuse, N.Y., Nov. 3, 1861. A well-known reform rabbi and a leader in Chicago civic and philanthropic activities, he was rabbi of the Zion Congregation (1887-95); member of the Chicago Board of Education (1898-1905); and rabbi of Isaiah Temple (1895-1927), retiring as rabbi emeritus in 1927. He was president of the Chicago Rabbinical Association from 1920 to 1925. As an author, he wrote only one book, *Funeral Agenda of Jews* (1897).

Stonehaven, 1st Viscount, John Lawrence Baird. British statesman; died in Stonehaven, Scotland, Aug. 19, 1941; born, Apr. 27, 1874. Educated at Eton and Oxford, he served in various overseas posts of the British diplomatic service (1896-1908); member of Parliament (1910-25); private secretary to the late Andrew Bonar Law (1911-16); Parlia-

mentary Member of the Air Board (1916-18); Under Secretary of State for the Home Office (1919-22); Minister of Transport and First Commissioner of Works (1922-24), and Governor General and Commander in Chief of the Commonwealth of Australia (1925-30). He was created a baron in 1925 and a viscount in 1938. On a visit to the United States in 1940 Lord Stonehaven observed to the press, "We are completely confident that we will win the war. Not one defeatist is to be found in England."

Strong, Lee A (bram). American entomologist; died in Madera Canyon, Santa Rita Mountains, Ariz., June 2, 1941; born in Russell, Ia., June 17, 1886. An enemy of plant-destroying pests for thirty years, he was chief of plant quarantine and control administration and chairman of the plant quarantine board, U.S. Department of Agriculture (1929-32); chief of the Bureau of Plant Quarantine (1932-33), chief of the Bureau of Entomology (1933-34), and since 1934, when the two above bureaus were combined, chief of the Bureau of Entomology and Plant Quarantine.

Stroock, Sol M. American corporation lawyer and Jewish leader, president of the Federation for the Support of Jewish Philanthropic Societies in New York City from 1926 to 1929, and since 1931 chairman of the board of the Jewish Theological Seminary of America, and since 1940 president of the American Jewish Committee, died in White Sulphur Springs, W.Va., Sept. 11, 1941; born in New York, N.Y., Sept. 22, 1873.

Stuart, Duane Reed American classical scholar and educator, died in Greensboro, Vt., Aug. 29, 1941, born in Oneida, Ill., Sept. 27, 1873. Graduated from the University of Michigan in 1896 (Ph.D. degree in 1901), he became a preceptor in classics at Princeton University from 1905 to 1907, and since 1907 Kennedy professor of Latin languages and literature. At his death he was chairman of the Princeton Department of Classics. During 1924-25 he was Sather professor of classical literature at the University of California. Dr. Stuart was the author of *Epochs of Greek and Roman Biography* (1928), editor of *The Agricola of Tacitus* (1908), and *The Germania of Tacitus* (1916), and joint collaborator of *Greek Inscriptions of Southern Syria* (1911-15).

Stuart, James Everett. American painter; died in San Francisco, Calif., Jan. 2, 1941, born near Dover, Me., Mar. 24, 1852. Better known for his landscape painting of the American Far West and of Alaska, he also was the inventor of a process of painting upon aluminum by which pigments could be made to attach themselves to, and virtually become a part of, the metal painted, resisting all signs of erosion. Five of his paintings, done by his aluminum process, were sold for \$15,000 each. His work is represented in the collections of museums (especially in the Southwest), art associations, educational institutions, and connoisseurs in America and Europe.

Sulzer, William. American ex-governor; died in New York City, Nov. 6, 1941; born in Elizabeth, N.J., Mar. 18, 1863. He served as a Democratic member (New York) of the U.S. House of Representatives from 1895 to 1913. Elected Governor of New York State in 1912, he was impeached and removed from office in 1913, the only Governor of New York ever turned out of office.

Sweet-Escott, Sir (Ernest) Bickham. British colonial administrator, died in Worthing, Eng., Apr. 10, 1941; born in Bath, Eng., Aug. 20, 1857. He was Governor and Commander-in-Chief of British Honduras (1904-06), Leeward Islands (1906-12),

and was Governor of Fiji and High Commissioner and Consul-General for the Western Pacific (1912-1918).

Taberski, Frank. American pocket billiard champion in 1916-18, 1925, 1927-29; died in Schenectady, N.Y., Oct. 23, 1941; born, 1888. He took part in twenty world championship challenge matches and won them all.

Tagore, Sir Rabindranath. Indian poet; died in Calcutta, India, Aug. 7, 1941; born in Calcutta, May 6, 1861. A member of one of the most influential and distinguished families of India, as a youth, he composed many patriotic songs, combining his deep love for his country—expressed in psalm-like poetry—with fervent appeals to his countrymen, earning him the title "Soul of Bengal." These songs are believed to have accomplished as much towards the edification and binding together of all India as any other single force.

In 1901 he founded the famous school, Shantiniketan, at Bolpur, Bengal, which later developed into an international university called Visva Bharati. All classes of Indian men came to the school, representing all the various religious creeds and castes that Tagore zealously attempted to eradicate. The school was sylvan in its instruction, for classes were held out-of-doors and lessons were often quoted as students strolled through the forest. (It was based on the "forest schools" of ancient India.) All of Tagore's Nobel Prize money (awarded in 1913), his royalties from his books, and revenue from his estates were given to this school.

Sir Rabindranath wrote about 50 dramas which never reached popularity outside of India, nearly 100 books of verse containing over 3,000 poems, approximately 40 works of fiction and short story, countless songs with notations, about 50 books of literary, political, and religious essays and numbers of others on travel and children's stories. His *Gitanjali* (Song Offerings) won the Nobel Prize and his two plays, *Sacrifice* and *The Post Office*, were produced in New York City in 1913. Other works, translated into English, include *The Crescent Moon*, *Chitra*, *One Hundred Poems of Kabir*, *Fruit Gathering*, *Stray Bird*, *The Lover's Gift and Crossing*, *Nationalism*, *Lectures on Personality*, *My Reminiscences*, *The Parrot's Training*, *The Home and the World*, *Sakuntala*, and *Red Oleanders*. Sir Rabindranath visited the United States several times on lecture tours.

Tague, Peter F. American Congressman (Dem.) and Boston postmaster; died in Boston, Mass., Sept. 17, 1941; born in Boston, June 4, 1871. Postmaster of Boston since October, 1935, he was a member of the U.S. House of Representatives from 1915 to 1925.

Taliaferro, Thomas Hardy. American educator, died in Washington, D.C., Sept. 26, 1941; born in Jacksonville, Fla., Mar. 22, 1871. In the educational field since 1890, he was the first president of the University of Florida (1901-04); and since 1907 had been associated with the University of Maryland as professor of civil engineering (1907-20). He was dean of the College of Engineering (1916-20), dean of the College of Arts and Sciences (1927-37), and dean of the faculty from 1937 until his retirement as dean emeritus in June, 1940.

Tassin, Algernon de Vivier. American educator and author; died in Montclair, N.J., Nov. 3, 1941; born at Fort Halleck, Nev., Dec. 11, 1869. A follower of the stage during 1894-1905, he became associated with Columbia University in 1905, becoming an associate professor in 1931, retiring in June, 1941. Originator and instructor of the course "the Analysis of the Written Word," he was the author

of *Rust* (1911), *The Magazine In America* (1916), *The Craft of the Tortoise* (1919), *The Oral Study of Literature* (1923), and co-author of *A Child's Story of American Literature* (1923).

Taylor, Charles H(enry). American journalist; died in Boston, Mass., Aug. 18, 1941; born in Charlestown, Mass., Oct. 2, 1867. He was treasurer and a director of the Globe Publishing Co., publishers of *The Boston Globe* and *The Boston Evening Globe*, from 1893 to 1937, and was president of the American Newspaper Publishers Association (1901-04).

Taylor, Edward T(homas). American Congressman (Dem.); died in Denver, Colo., Sept. 3, 1941; born in Metamora, Ill., June 19, 1858. Graduated from the University of Michigan (1884), he served as a member of the Colorado Senate (1896-1908); and in 1909 was elected to the U.S. House of Representatives, where he served fifteen consecutive terms (1909-41). Chairman of the important House Appropriations Committee since 1937, he was the author of more laws and constitutional amendments than any other member of Congress; two of the most prominent being the Taylor grazing act, which directed the use of the public domain by stock men, and the 640-acre stock-raising homestead law, through which 32,000,000 acres of practically barren land was given into private hands and advantageous use. He was chairman of the Democratic caucus in 1935-37, acting majority leader of the House during the year 1935, and in 1937, when the naval expansion program was being planned, said: "I think that it is a good investment and a wise precaution to let the world know that we are able to take care of ourselves."

Taylor, Henry O(sborn). American historian; died in New York, N.Y., Apr. 13, 1941; born in New York, Dec. 5, 1856. Graduating from Harvard College in 1878 and Columbia Law School in 1881, he immediately began to strive for the position he later attained as one of the world's foremost authorities on the history of civilization. After 10 years in the examination of ancient literatures, he brought forth *Ancient Ideals, a Study of Intellectual and Spiritual Growth From Early Times to the Establishment of Christianity* (1896). Then in 1901 he published *The Classical Heritage of the Middle Ages. The Medieval Mind* took 10 years of preparation, but by 1938 had passed into the fifth edition. He labored six years to produce *Thought and Expression in the Sixteenth Century* (1922). Other works by Dr. Taylor are *Deliverance—the Freeing of the Spirit in the Ancient World* (1915), *Greek Biology and Medicine* (1922), and *A Layman's View of History* (1935).

Teleki, Paul. Hungarian politician and geographer; died in Budapest, by suicide, Apr. 3, 1941; born in Hungary, 1879. As Premier of Hungary, since 1939 (also during 1920-21), he tread a delicate path—the great tightrope walker—apparently falling completely under Nazi control in an effort to preserve his country's independence, but personally pro-British. All Hungary believed he took his life when he could no longer continue his precarious balancing act, for death came as motorized German troops moved to Southern Hungary, amid reports that the Nazis were demanding Hungarian army help to attack Yugoslavia, a country with which Premier Teleki had just completed a friendship pact in January (1941). Only after Teleki's death was it disclosed that he was one of those behind the book *Why Germany Cannot Win the War*, which broke all sales records in Hungary. Among the books he wrote were *The Cartography of the Japanese Islands* (1908), *A földrajzi gondo-*

lat története (1917), *Magyarország néprajzi térképe* (1919), and *The Evolution of Hungary and Its Place in European History* (1923).

Tennent, D(avid) H(ili). American biologist and educator, associated with Bryn Mawr College since 1904. Professor since 1912, and research professor since 1938, he was particularly active in the fields of marine biology and dyes; died in Bryn Mawr, Pa., Jan. 14, 1941; born in Janesville, Wis., May 28, 1873.

Thompson, Charles Miner. American editor and author, associate editor of *Youth's Companion*, a magazine for boys, during 1890-1911, and editor of the publication from 1911 to 1925, died in Cambridge, Mass., Dec. 19, 1941; born in Montpelier, Vt., Mar. 24, 1864. His published works include *The Nimble Dollar*, *The Calico Cat*, and *The Army Mule*.

Thompson, James Westfall. American historian, died in Berkeley, Calif., Sept. 30, 1941; born in Pella, Ia., June 3, 1869. Graduated from Rutgers College in 1892, he became associated with the University of Chicago in 1895, being professor of medieval history from 1913 to 1932. In 1932 he was appointed Sidney Hollman Ehrman professor of European history at the University of California, becoming professor emeritus in 1939. An internationally known scholar, especially of medieval history, he was the author of numerous historical works, including *The Wars of Religion in France—the Huguenots*, *Catherine de Medici and Philip II, 1559-76* (1909), *The Last Pagan* (1916), *Feudal Germany* (1929), *Economic and Social History of the Later Middle Ages* (1931), *The Living Past* (1931), *Literacy of Laty in Middle Ages* (1939), and *History of Historical Writing*, not yet published at the time of his death.

Thompson, Reginald Campbell. British archeologist and Assyriologist; died in London, May 24, 1941; born Aug. 21, 1876. Assistant in the Egyptian and Assyrian Department of the British Museum (1899-1905), and assistant professor of Semitic languages at the University of Chicago (1907-09), he conducted numerous excavations in the Near East. He wrote prodigiously, chiefly on the arts, sciences, and culture of the ancient Near East.

Timberlake, Charles B(ateman). American Republican Congressman from Colorado (1915-33); died in Sterling, Colo., May 31, 1941; born in Wilmington, O., Sept. 25, 1854.

Titulescu, Nicholas. Rumanian diplomat and politician; died in Carnes, France, Mar. 17, 1941; born at Craiova, Rumania, in 1883. Attaining his first Cabinet post, Minister of Finance, in 1917 (held again in 1920-22), he served as a delegate to the Versailles Peace Conference and signed the Treaty of Trianon; Minister at the Court of St. James (1928-32), and Foreign Minister (1922-28, 1933-36).

He was Rumania's permanent delegate at the League of Nations, and in 1930-31 served as president of the Assembly. His renown as an orator spread wide after his speeches at the Assembly. Principal proponent of the Little Entente (which he negotiated for Rumania in 1920), and friendship with Russia and France, he was caught between the rising Nazi tide and the anti-Semitic Iron Guards, against whom he was in opposition; his positions on both issues forced him into retirement in 1936.

Treat, Charles G(ould). American army officer; died in Washington, D.C., Oct. 11, 1941; born in Dexter, Me., Dec. 30, 1859. Graduated from the U.S. Military Academy in 1882, he was a veteran of the Spanish-American and World Wars. Known

as an expert in field artillery work, he spent nearly his entire career, until he was assigned to the general staff in 1915, with artillery regiments. With the outbreak of the World War he was promoted to a brigadier general, becoming a major general in August, 1917. A recipient of the Distinguished Service Medal, he was chief of the American military mission to Italy at the close of the World War. He retired Apr. 27, 1922.

Udet, Ernst. German officer and air expert; died in Germany, Nov. 17, 1941; born in Frankfort-am-Main, Germany, June 22, 1896. Internationally famous for his achievement of shooting down sixty-two enemy craft in the World War and for his remarkable stunt flying, he was credited with the development of Germany's parachute troops and the dive-bombing tactics of the present war. Chief of the technical bureau of the German air force, and the "brams" of the Luftwaffe, General Udet was the one man responsible for keeping the Nazi air force abreast of all her enemies. At his death he was Quartermaster General of the Nazi air force.

Underhill, Evelyn (Mrs. Stuart Moore). British author and mystic; died in England, June, 1941; born in Wolverhampton, Staffordshire, England, 1875. One of the most productive of modern English writers on mysticism, she had written some thirty books, some in verse, on mysticism and the spiritual life. With the late Rabindranath Tagore, Indian author, she collaborated on *One Hundred Poems of Kabir*. Other of her published works include *Mysticism, Concerning the Inner Life, Essentials of Mysticism, The House of the Soul, Man and the Supernatural, and Theophantes*.

Udike, Daniel Berkeley. American printer, founder (1893) and senior partner of the Merrymount Press; died in Boston, Mass., Dec. 28, 1941; born in Providence, R.I., 1860. Accorded as one of the chief factors in the improvement of typography in America, his writings include the standard works *Printing Types—Their History, Forms and Use* (1922), and *In the Day's Work* (1924). He was the editor of *More's Dissertation on English Typographical Founders and Foundries* (1924), and *Notes on the Merrymount Press* (1934).

Ussishkin, Menachem Mendel. Russian Zionist leader; died in Jerusalem, Palestine, Oct. 2, 1941; born in Dubrowna, Russia, 1863. Zionist leader and world president of the Jewish National Fund, Zionist land-purchasing agency, he was a founder of the first modern Zionist society and played a prominent role in the first Zionist Congress in 1897. Ussishkin was a delegate of the Zionist movement at the Peace Conference in Paris in 1919. The next year he became chief of the Zionist Commission in Palestine and as such compelled the acquisition of the Jezreel Valley lands. In 1937, as president of the Jewish National Fund, he strongly denounced attempts of the British Government to partition Palestine, recommending retention of the Biblical borders of Palestine.

Van Devanter, Willis. American jurist; died in Washington, D.C., Feb. 8, 1941; born in Marion, Ind., Apr. 17, 1859. Graduating from the Cincinnati College Law School (1881), he went to Wyoming, and there in 1889 became Chief Justice of the State Supreme Court. He left the judiciary (1890) to serve as council to many of the powerful interests in Wyoming, thereby paving his way to becoming chairman of the Republican State Committee (1892-94); member of the Republican National Committee (1896-1900); delegate to the Republican National Convention (1896); and Assistant Attorney General for the Department of the

Interior, Washington, D.C. (1897-1903). In 1903 he was appointed U.S. Circuit Court judge and in 1910, associate justice of the Supreme Court. He retired from the Court in 1937.

Justice Van Devanter was the Supreme Court's most militant defender of property rights and its most consistently conservative member; without exception he voted against the major New Deal laws, and also its plan to enlarge the Supreme Court. In 1932, with the resignation of Justice Holmes, he became the doyen of the Court and its leading authority on rules, procedure, and tradition.

Among the important opinions written by him were: A State has no power to fix the weight of bread; the invalidation of the Federal gift tax; the Government has no power to tax the salaries of judges; the upholding of the New York "anti-Klan" law, and approbation of the Minnesota occupation tax on mining. One of the most important decisions handed down by him—in the pre-Roosevelt era (1920)—was the sweeping aside of every attack on the Eighteenth Amendment and the Volstead Act.

Varrrier-Jones, Sir Pendrill Charles. British physician, founder and director of Papworth Village Settlement, a home for tuberculars, and author of numerous books and articles on tuberculosis; died at Papworth, Cambridgeshire, Eng., Jan. 30, 1941; born, Feb. 24, 1883.

Venturi, Adolfo. Italian art historian; died in Santa Margherita Ligure, Italy, June 9, 1941; born in Modena, Italy, Sept. 4, 1856. He served as Keeper of the Estense Gallery (1878-88); Inspector General of Fine Arts attached to Ministry of Public Instruction (1888-98); Director, Rome National Gallery (1898-1901); Professor of Medieval, Renaissance, and Modern Art, Rome University (1900-31); and Senator since 1924. His publications were *La Reale Galleria Estense di Modena* (1882), *La Storia dell'arte italiana* (a 30-volume history of Italian art begun in 1901), *Botticelli* (1923), *Michelangelo* (1924), *La pittura quattrocentesca nell'Emilia* (1930), *La pittura quattrocentesca in Lombardia, Piemonte e Liguria* (1931), and *Pisanello* (1939).

Vincent, George (Eldgar). Educator; died in New York, N.Y., Feb. 1, 1941; born in Rockford, Ill., Mar. 21, 1864. Graduating from Yale (1885), he began his pedagogical career in 1894, becoming a member of the University of Chicago faculty. Here he advanced to a full professorship, and in 1911 accepted the presidency of the University of Minnesota. In 1917 he resigned to become president of the Rockefeller Foundation, retiring in 1929.

During the World War, as head of the Rockefeller Foundation, he became one of the chief war relief directors; establishing hospitals, both here and abroad, financing the teaching of new surgical methods, supplying serum for war casualties, and organizing facilities for research in war medicine. After the war, he directed the Foundation in its fight against the spread of disease, and in the improvement of sanitation in China. After his retirement from the foundation, Dr. Vincent continued his interest in humanitarian work, and was chosen honorary and acting president of the Community Chests and Councils (1938).

In the field of journalism he was extremely active, writing, among others: *Social Mind and Education* (1896), and (with Woodbury Small) *An Introduction to the Study of Society* (1895).

Von Donop, Sir Stanley (Brenton). British army officer; died in Bath, Eng., Oct. 17, 1941; born, Feb. 22, 1860. Possessing a distinguished record as a

soldier, he served as Master General of Ordnance and as a Fourth Military Member of the Army Council during 1913-16, and since 1925 had been colonel commandant of royal artillery. He was promoted to a major general in 1914.

Von Hintz, Paul. German rear admiral and diplomat; died in Berlin, Germany, Aug. 23, 1941; born at Schwedt-on-Oder, Germany, February, 1864. A one time aide-de-camp to the late Kaiser Wilhelm II, he served as Minister to Mexico, China, and Norway during 1911-18. In 1898 he played an important role in negotiations with Admiral Dewey, who threatened to search two German warships off Manila, and won the plaudits of Dewey for his statesmanship. In July, 1918, he was named Secretary for Foreign Affairs, holding that post until the fall of Germany. After 1921, when he was mentioned as a possible Ambassador to the United States, little was heard of him.

Von Schobert, Eugen Ritter. German army officer, killed in action on the Russian front, Sept. 12, 1941; born in Wuerzburg, Germany, 1883. A member of an old Bavarian family noted for its military officers, he served with distinction in the World War. After holding several prominent positions in the German War Ministry, he was appointed Inspector of Infantry in 1933 and promoted to a lieutenant general in 1937. General Von Schobert was made commander of the 7th Army Corps in 1938 and, at the same time, promoted to general of infantry. In 1940 his corps broke through north of Verdun and he was advanced to the rank of colonel general by Hitler in his Reichstag speech of July 19, 1940.

Von Siemens, Carl Friedrich. German industrialist; died in Berlin, July 10, 1941, born in Charlottenburg, Germany, Sept. 5, 1872. The outstanding electrical industrialist in Germany, he had headed the firm of Siemens & Halske since 1919. (The firm ranks among the first in the Reich's war industries.) He was a member of the Reichstag (1920-24); chairman of the board of the German State Railways (1924-34), and as chairman of the Reich Economic Council he represented Germany at the International Economic Conference at Geneva in 1927. He came to the United States in 1931 to address the Conference of Major Industries.

Wakefield, 1st Viscount, Charles Cheers. British philanthropist; died at Beaconsfield, Eng., Jan. 15, 1941; born in Liverpool, Eng., 1859. He obtained a huge fortune in the oil business, which enabled him for nearly half a century to play the role of philanthropist to hospitals, art galleries and other organizations, and to indulge in his fondness for encouraging the development of speed on land, sea, and in the air. It is estimated that he gave \$5,000,000 to hospitals and art galleries and an equal sum spent in his attempts for speed. His writings included: *America To-day and To-morrow*.

Walker, Stuart. American producer, actor, and playwright; died in Beverly Hills, Calif., Mar. 13, 1941; born in Augusta, Ky., Mar. 4, 1888. After graduating from the University of Cincinnati, he became associated with David Belasco (1909-14), staging *The Lily*, *The Concert*, and *The Governor's Lady* among others. In 1915 he organized and presented the Portmanteau Theatre, with a repertoire of 14 plays, and toured the country with it for several seasons. Since 1931 he was engaged in Hollywood and since 1936 a producer. Among the films he directed were: *Tonight Is Ours*, *The Eagle and the Hawk*, *Great Expectations*, and *Bulldog Drummond's Peril*. He was the author of many one-act plays, compiled under the headings *Port-*

manteau Plays (1917); and *More Portmanteau Plays* (1919).

Wallace, (David) Euan. British diplomat, former Minister of Transport (1939-40); member of Parliament since 1922; and Senior Regional Commissioner for Civil Defense in London since 1940; died in London, Feb. 10, 1941; born in 1892.

Walpole, Sir Hugh (Seymour). British author; died near Keswick in the Cumberland Mountains, England, June 1, 1941; born in Auckland, New Zealand, 1884. One of the most prolific writers of this or any other age, he covered a wide literary field. He went from novels to short stories, to children's tales, to fantasies, to belles-lettres, and also found time for dramatizations, adaptations, playwriting, and innumerable prefaces. Sir Hugh's first novel, *The Wooden Horse*, appeared in 1909 and then, in successive years, came *Maradick at Forty*, *Mr Perrin and Mr Trill*, *The Prelude to Adventure* and others, at a year's interval, until the outbreak of the World War. His post-war books included *Jeremy* (1919), *The Young Enchanted* (1922), *The Cathedral* (1922), *These Diversions: Reading* (1926), *Wintersmoon* (1928), *All Souls' Night* (1933), *A Prayer for My Son* (1936), *Roman Fountain* (1940), and *Semantics* (1941). His best known plays were *The Cathedral* (1932), *The Young Huntress* (1933), and *The Haxtons* (1939).

Walsh, William Henry. American physician, consulting expert on hospital planning and organization; died in Chicago, Mar. 28, 1941, born in Philadelphia, Mar. 8, 1882. Dr. Walsh specialized in studies and surveys to determine the hospital needs of communities in connection with hospital construction, and had been associated with the planning of some \$250,000,000 worth of such construction in the United States and Central and South America.

Walter, Eugene. American playwright and scenarist; died in Hollywood, Calif., Sept. 26, 1941; born in Cleveland, O., 1877. A veteran playwright and motion-picture scenarist, he was the author of such well known plays as *Paul in Full* (1907), *The Easiest Way* (1909), *Boots and Saddles* (1910), *Fine Feathers* (1912), *The Little Shepherd of Kingdom Come* (1916), and *Jealousy* (1928).

Wason, Edward H. American Republican Congressman from New Hampshire (1915-33); died in New Boston, N.H., Feb. 6, 1941; born in New Boston, Sept. 2, 1865.

Watkins, Aaron Sherman. American clergyman, educator, and prohibitionist; died in Bellefontaine, O., Feb. 10, 1941; born in Rushsylvania, O., Nov. 29, 1863. A militant champion of prohibition, he was the Prohibition Party candidate for Governor of Ohio, 1905, 1908, 1932; for Vice-President of the United States, 1908, 1912; and for President in 1920. Ordained a Methodist minister in 1895, he held various pastorates before becoming president of Asbury College (1909-10).

Watson, John Christian. Australian politician, member of the Commonwealth House of Representatives during 1901-10 and Prime Minister and Treasurer of Australia in 1904; died in Canberra, Australia, Nov. 18, 1941; born in Valparaiso, Chile, Apr. 9, 1867.

Wear, Joseph (Walker). American sportsman and banker; died in Philadelphia, Pa., June 4, 1941; born in St. Louis, Mo., Nov. 27, 1876. Co-holder of the U.S. doubles championship in tennis six times and the racquet doubles title three times, he was non-playing captain of the U.S. Davis Cup teams in 1928 and 1935 and was chairman of the Davis Cup committee of the United States Lawn Tennis Association during 1928-30. Wear was co-

donor of the Davis Cup, emblematic of the world championship in tennis. At his death he was a partner in the Philadelphia brokerage firm of Merrill Lynch, E. A. Pierce & Cassatt.

Welch (Smiling Mickey) Michael. American baseball player; with the New York Giants during 1883-92. He became one of the twelve major league pitchers to win more than 300 games—309, died in Nashua, N.H., July 30, 1941; born in Brooklyn, N.Y., July 4, 1859.

Weymouth, Frank Elwin. American civil engineer; died in Los Angeles, Calif., July 22, 1941; born in Medford, Me., June 2, 1874. With the U.S. Bureau of Reclamation from 1902 to 1924, he furnished "The Weymouth Report," (1924) credited with having provided the basis of facts and figures for the Boulder Dam project. In 1932 he was appointed chief engineer and general manager of the Metropolitan Water District of Southern California, and as such supervised the building of the canal project (1940) which brings water over 300 miles to the coastal plains.

White, Charles Lincoln. American educator and clergyman; died in Arlington, Mass., Apr. 19, 1941; born in Nashua, N.H., Jan. 22, 1863. He entered the Baptist ministry in 1890, and after serving several pastorates was appointed president of Colby College in 1901; retired in 1908. Included among his writings were: *The Churches at Work* (1915), (revised edit, 1928), *Children of the Lighthouse* (1916), and *A New Approach to Annuities* (1930).

White, Joseph Augustus. American ophthalmologist; died in Richmond, Va., Feb. 16, 1941; born in Baltimore, Md., Apr. 19, 1848. He was founder of the University College of Medicine and established the first free clinic in Richmond for eye, ear, and throat treatment; and was professor of ophthalmology at the Medical College of Virginia from 1893 to 1932.

White, Trumbull. American editor and writer; died in New York City, Dec. 13, 1941, born in Winter-set, Ia., Aug. 12, 1868. He was with the *Chicago Morning News*, *Chicago Times*, and *Chicago Record* from 1890 to 1901, during which time he covered the Cuban insurrection (1897), and the Cuban and Puerto Rican campaigns (1898). He was the editor of *The Red Book* (1903-06), *Appleton's Magazine* (1906-09), *Adventure* (1910-11), and *Everybody's* (1911-15). His publications include *Wizard of Wall Street* (1892), *Our War with Spain* (1898), *Our New Possessions* (1899), *Martique and the World's Great Disasters* (1902), co-author of *San Francisco Earthquake* (1906).

Wick, Frances Gertrude. American scientist and educator; died in Poughkeepsie, N.Y., June 15, 1941; born in Butler, Pa., Oct. 2, 1875. Graduated from Wilson College in 1897, she studied four additional years at Cornell University (1904-08); became an instructor in physics at Vassar (1910-15), assistant professor (1915-19), associate professor (1919-22), since 1922 a full professor, and since 1939 chairman of the department. She was noted especially for her researches in the field of luminescence or cold light, which takes in all forms of radiation in which there is emission of light from causes other than high temperature.

Wilberforce, Sir Herbert William Wrangham. British tennis leader; died in Kensington, Eng., Mar. 28, 1941; born, 1864. President or chairman of the All-England Tennis Club from 1922 to 1936, he was known as the "maker" of Wimbledon, beginning his activities in behalf of tennis in 1893. In 1887 he was co-holder of the British doubles title.

Wile, Frederic William. American author, newspaper columnist and editorial writer; died in Washington, D.C., Apr. 7, 1941; born in LaPorte, Ind., Nov. 30, 1873. After attending the University of Notre Dame, he worked two years on a Chicago newspaper before being sent to London to report on the Boer War—other major assignments included the death and funeral of Queen Victoria, the coronation of Edward VII, and the events that led to the separation of Norway and Sweden. In Berlin from 1902, he joined the London Daily Mail (1906) as its chief correspondent, until the start of the World War, during this same period also he wrote for *The Chicago Tribune* and *The New York Times*. During the World War he was engaged by the Intelligence Section of the A.E.F. as a specialist on German affairs. After the war Wile became head of the Washington Bureau of *The Philadelphia Public Ledger* and remained as such until 1922 when he joined the editorial staff of *The Washington Evening Star*.

In 1923 he began a weekly broadcast *The Political Situation in Washington Tonight*, over a N.B.C. network, and in March, 1929, he signed a contract with C.B.S. for a weekly summary of national political developments.

Among his publications were *Our German Cousins* (1909), *Men Around the Kaiser* (1913), *The Assault* (1916), *Explaining the Britishers* (1918), *Emile Berliner, Maker of the Microphone* (1926), and *News Is Where You Find It* (1928), an autobiography.

Wilhelm II, Friedrich Wilhelm Victor Albert Hohenzollern. Ex-Kaiser of Germany; died in exile in his estate at Doorn, the Netherlands, June 4, 1941; born in Berlin, Germany, Jan. 27, 1859. Succeeding to the throne as King of Prussia and Emperor of Germany in 1888, the Kaiser's first notable steps were the dismissal of Bismarck—"dropping of the pilot"—and in the development of plans for naval supremacy and imperialism. Yet, in spite of his opposition to England and general antagonism toward the world, the first 25 years of his reign were peaceful ones. During these years Wilhelm was constantly impressing himself on the world as a universal genius. Posing in his many medal-covered uniforms, he assumed an attitude of a fierce warlord.

On June 28, 1914, the assassination of the Archduke Franz Ferdinand struck the spark, kindling the fire that flamed throughout the world. Wilhelm led his people into the war with fierce determination, and would not let a single military operation go through without his approval. But within two years he had surrendered the leadership to his generals, and had retired far behind the front lines. The declaration of war by America (1917) did not impress him at all, and he continued to believe that nothing could stop his army. The defeat of the Germans in their last great effort at the battle of the Marne (August, 1918) was the beginning of the end; the mutiny of the Imperial Navy brought about his abdication (Nov. 10, 1918).

He spent his final years writing prolific denials that Germany was culpable for the war, chopping wood for exercise, and occasionally distributing largess to the poor of Doorn. The bitter hatred that the world held for him abated somewhat as the years passed, and he came to be regarded as a harmless old man. Among his many publications were: *Comparative Historical Tables from 1878 to the Outbreak of the War in 1914*, *Events and Figures*, *Reminiscences of Corfu*, *My Early Life*, and a history of the Hohenzollern family.

Williams, John D. American stage director and

producer, associated with Charles Frohman and A. L. Erlanger in producing many famous American plays; died in the Bronx, N.Y., Mar. 22, 1941; born in Boston, Mass. He presented the following plays in New York City: *The Copperhead* (1918); *For the Defense, Three for Diana, Toby's Bow, Up from Nowhere* (1919); *All Soul's Eve, The Letter of the Law, Beyond the Horizon* (1920); *Gold* (1921); *The Assumption of Hannele* (1924); *L'Aiglon, Savages Under the Skin* (1927). Williams also staged *Rain*, the play in which the late Jeanne Eagels achieved success, and in 1920 he presented the first Broadway play of Eugene O'Neill, *Beyond the Horizon*.

Willington, 1st Marquess of (Freeman Freeman-Thomas). British statesman; died in London, Eng., Aug. 12, 1941; born Sept. 12, 1866. One of the few commoners ever to be created a marquess, he served as a Liberal member of Parliament (1900-10); was raised to the peerage and sat in the House of Lords (1910-13); served as Governor of Bombay (1913-19) and Governor of Madras (1919-24); was present as delegate for India at the Assembly of the League of Nations (1924); Governor-General of Canada (1926-31); Viceroy and Governor-General of India (1931-36), and, since 1936, Lord Warden of Cinque Ports. In 1940 Lord Willington toured South America as the head of a British trade mission, comprising an impressive group of titled and untitled English trade experts. He was a former chairman of the English-Speaking Union.

Winslow, Edward Delbert. American Consul General at Stockholm, Sweden (1888-1900) and at Copenhagen, Denmark (1911-17); died in the Bronx, N.Y., Jan. 22, 1941, born in West Chicago, Ill., in 1859.

Woodruff, Edwin Hamlin. American educator; died in Ithaca, N.Y., July 8, 1941, born in Ithaca, Sept. 2, 1862. Professor of law at Cornell University from 1895, he was acting dean of the law school from 1914 to 1916 and dean from 1916 to 1921, retiring in 1927 as professor emeritus. He was the author of *Cases on Domestic Relations* (1897), *Introduction to the Study of Law* (1897), *Cases on Insurance* (1900), *Selected Cases on the Law of Quasi-Contracts* (1905).

Woods, Sir James. Canadian industrialist; died in Toronto, Can., Apr. 25, 1941; born in Woodstock, Ont., in 1856. He was president of Gordon MacKay & Co., Ltd., textile wholesalers, for whom he had worked since he was 19 years old. In 1915 he was knighted for his industrial work in aid of the British Empire, and became a Knight Commander of the Order of the British Empire (1917) for his labor as a member of the British War Commission in New York.

Woolf, Virginia (Mrs.). British novelist, granddaughter of Thackeray and a relative of the Darwins, Symonds, and Strachey; died near Lewes, Sussex, Mar. 28, 1941; born in London, 1883. Born with literary blood in her veins, she became one of the great of English letters. Among her works are included *The Voyage* (1915), *Night and Day* (1919), *Monday or Tuesday* (1921), *The Common Reader* (1925), *Orlando* (1929), *Flush* (1933), *The Years* (1937), *Three Guineas* (1938), and *Roger Fry, A Biography* (1940). Her husband was Leonard Woolf, novelist and essayist, founder of the Hogarth Press and former literary editor of *The Nation*.

Wren, Percival Christopher. British author; died at Amberley, Gloucestershire, Eng., Nov. 23, 1941; born in Devonshire, Eng., 1885. A major in the Indian Army Reserve of Officers, he was the

author of such extremely well known books as *Beau Geste* (1924), *Beau Sabreur* (1926), *Beau Ideal* (1928), *Good Gestes* (1929), *Mysterious Waye* (1930), *The Fort in the Jungle* (1936), *Worth While* (1937), *Cardboard Castle* (1938), *Paper Prison* (1939), *The Disappearance of General Jason* (1940), and *Two Feet from Heaven* (1940).

Wright, Huntley. British musical comedy actor; died in Bangor, North Wales, July 10, 1941; born in London, Eng., Aug. 7, 1869. On the stage for 48 years, his career spanned the years from gaslights to broadcasts for the British Broadcasting Corporation and a role in the motion picture *Look Up and Laugh*.

Yager, Arthur. American educator, and Governor of Puerto Rico (1913-21); died in Louisville, Ky., Dec. 24, 1941; born in Henry Co., Ky., Oct. 29, 1857. Dr. Yager was president of Georgetown College, Kentucky, from 1908 to 1913.

Yost, Casper S(alathiel). American editor; died in St. Louis, Mo., May 30, 1941; born in Sedalia, Mo., July 1, 1864. He became associated with *The St. Louis Globe-Democrat* in 1889, rose to assistant to managing editor, and Sunday editor (1890-1915), and editor of the editorial page since February, 1915. He was founder of the American Society of Newspaper Editors (1922), and president (1922-26). His publications included *Patience Worth* (1916), *The World War* (1919), *Principles of Journalism* (1924), *The Quest of God* (1929), and *The Carpenter of Nazareth* (1938).

Young, Rose. American author and editor; died in Mount Kisco, N.Y., July 6, 1941; born in Lafayette Co., Mo. Editor of the University Publishing Co., New York City (1903-07) and director of the Leshe Bureau of Suffrage Education from 1917 to 1922, her interest in woman suffrage prompted her to write the novels *Petticoat Push*, *From Kitchen to Night Court*, and *Her Wages and Her Morals*. Other of her books were *Sally of Missouri* (1903), *Henderson* (1904), *Murder at Manson's* (1927), *The Miss Nigger Stories*, and *The Shanklin Stories*.

Zahle, Herluf. Danish diplomat; died in Berlin, May 4, 1941; born in Copenhagen, 1873. Minister to Sweden in 1919 and to Germany since 1924, he signed a 10-year non-aggression pact with Germany on May 31, 1939. He was president of the Danish delegation to the League of Nations (1920-27) and president of the League Assembly in 1928.

Zonghi, Giovanni Maria. Italian Roman Catholic archbishop; died at Fabriano, Italy, Aug. 8, 1941; born in Italy, 1847. Dean of the Roman Catholic episcopacy and the last survivor of the court of Pope Pius IX, he was one of the private secretaries to Pius IX and served as a stenographer at the Vatican Ecumenical Council of 1870. He was named president of the Pontifical Ecclesiastical Academy by Pope Pius X and in 1914 was appointed Titular Archbishop of Colosse by Pope Benedict XV.

NEGRI SEMBILAN. See BRITISH MALAYA.

NEGROES. The approach to war by the United States during 1941 and the shock of the Japanese attack produced curiously mixed changes in the pattern of Negro life. This was inevitably seen most clearly in the national defense program. The War Department started a decidedly new practice when it began to train Negro and white Army officers in the same training schools, even in the deep South. This was done without either friction or difficulty. The doors of West Point swung open slightly wider,

with a modest increase in the number of Negro cadets. But the Navy, Marine Corps, and Coast Guard continued to exclude or limit the services of Negroes. The Marines and Coast Guard barred Negroes altogether. The Navy limited Negroes to menial service, which marked a retrogression from World War I when Negroes were permitted to rise to the rank of Chief Petty Officer.

Due to the prejudices of certain A.F.L. unions and of some employers skilled Negroes were denied employment, because of color, even by plants which were desperately in need of trained workers. When an effort to secure a Senate investigation of this discrimination was blocked by certain Southern Senators, A. Philip Randolph, President of the Brotherhood of Sleeping Car Porters, Walter White, Secretary of the National Association for the Advancement of Colored People, and others, organized a "march-on-Washington" as a means of protesting to the Government against this discrimination. The threatened demonstration caused the President to invite Messrs Randolph and White to meet with him, the Secretaries of War and the Navy, the heads of the Office of Production Management, the Office of Civilian Defense, and other Government agencies. Out of this conference came Executive Order No. 8802, June 25, barring discrimination in defense plants and by the Federal Government on account of race, creed, color, or national origin. The order provided for the establishment of a Committee on Fair Employment Practice to implement the anti-discrimination edict. Mark F. Ethridge, Editor of the Louisville (Ky.) *Courier-Journal*, was named as Chairman, and Lawrence W. Cramer, former Governor of the Virgin Islands, as Executive Secretary.

The most publicized of labor clashes during 1941 was that at the Ford plant in Detroit. Because Henry Ford employed more Negroes in semi-skilled and skilled jobs than any other employer in Detroit, Negro Ford workers and the Negro public were faced with a difficult dilemma—as to whether they should stand by Ford or join with their white fellow-workers through the U.A.W.-C.I.O. The majority of the Negro workers sided with the union. At the year's end there seemed to be no evidence that they were not benefiting on an equal basis with other Ford employees. Later in the year when white U.A.W.-C.I.O. workers in the Curtiss-Wright plant at Columbus, Ohio, dropped their tools in protest against a Negro tool and die-maker being employed, the national heads of the union ordered them to return to work and the heads of the Curtiss-Wright plant stood firm in obeying the President's Executive Order against discrimination and in refusing to yield to the prejudice of the striking workers. The issue was settled amicably, and the Negro tool and die-maker continued to work as plans were made to increase the number of Negro employees.

Established Negro artists, such as Marian Anderson, Paul Robeson, Dorothy Maynor, and Roland Hayes, continued in 1941 to add to their fame by singing before large and enthusiastic audiences in all parts of the United States. A new field of musical effort was successfully invaded for the first time by a Negro when Dean Dixon, 26-year-old orchestra conductor, was invited to conduct the famous N.B.C. Toscanini Orchestra in two coast-to-coast broadcasts. Mr. Dixon also served as guest conductor of the New York Philharmonic Orchestra at the Lewisohn Stadium, and directed the NYA New York Symphony.

W. C. Handy published in 1941 an absorbing story of his life, *Father of the Blues*. Langston

Hughes, brilliant young Negro poet, also published a charming and revealing autobiography, *The Big Sea*. Richard Wright, author of the widely discussed best-seller, *Native Son*, which was presented as a play on Broadway during 1941, added to his depiction of the handicaps of Negroes in his *12 Million Black Voices*.

Joe Louis added luster to his fame by defeating seven aspirants for the world's heavyweight title and offered to contribute his entire purse to the Navy Relief Society, despite the fact that neither Louis nor any other member of his race could serve in the Navy except as a menial. Louis's offer was accepted by the Navy for a fight in Madison Square Garden just after the close of the year, with Buddy Baer. Louis's contribution was \$47,100.94

Particularly notable during the year was the increased concern of younger white Americans with the negation of democracy through continued discrimination against the Negro and other American minorities. More sharply focused than ever as America neared participation in World War II was the contradiction of spending enormous sums to fight Hitlerism in Germany and Japanese imperialism in the Orient while lynchings, discrimination in the national defense program, disfranchisement, and discrimination in educational and economic opportunity in the United States continued to exist. Accompanying this awareness and largely the cause of it was the increasing organization of enlightened and militant opinion among Negroes themselves. Through the medium of the National Association for the Advancement of Colored People significant court decisions were won in the struggle against disfranchisement in the South through so-called white Democratic primaries, and against differentials in salaries paid to Negro teachers doing the same work as white teachers, which the U.S. Department of Education estimated to be in excess of 43 million dollars a year.

Years of educational work against lynching, particularly the campaign for Federal legislation, reduced the number of known lynchings during 1941 to five. All of them were of Negroes. The most discussed and publicized of these was the lynching of a young Negro Army volunteer, Felix Hall, on the grounds of Fort Benning, Ga. At the end of the year the War Department was still investigating the case.

The most significant and ominous development during the year was noted in Texas, where Negroes on trial in courts of law were assassinated in the courtroom by allegedly aggrieved relatives of the complainants. This was done with no apparent objection on the part of the court officials. Bob White, a Negro, whose conviction for rape had twice been reversed—once by the Texas Supreme Court and a second time by the U.S. Supreme Court—was killed in the courtroom on June 10 at Conroe, Texas. Mott Flournoy, Negro, was killed at Lufkin, Texas, in the same manner on November 23. The murderer in each instance was speedily acquitted. See ANTHROPOLOGY; PHILANTHROPY under *Rosenwald Fund*.

WALTER WHITE.

NEJD. See ARABIA under *Saudi Arabia*.

NEOPRENE. See CHEMISTRY, INDUSTRIAL under *Rubber*.

NEPAL. An independent kingdom between Tibet and India. It contains some of the highest mountains of the Himalaya. Area, 54,000 square miles; population, 5,800,000. Katmandu (capital), had 108,805 inhabitants; Patan, 104,929; Bhatgaon,

93,176. The principal exports are jute, rice, hides, oilseeds, ghee, cattle, and lumber; the chief imports are cotton goods, yarn, salt, sugar, spices, and metals. There are valuable forests in the southern part of the country. The revenue for 1940 was estimated at 12,500,000 rupees (1.24 Nepalese rupees equal 1 British Indian rupee). Nepal's government is a military aristocracy based on birth. All power is in the hands of the prime minister, a member of the ruling family. Ruler, King Tribhubana Bir Bikram (succeeded Dec. 11, 1911); Prime Minister, Gen. Joodha Shum Shere Jung Bahadur Ráná (installed Sept. 1, 1932).

NETHERLANDS, THE. A constitutional monarchy of northwestern Europe, invaded and occupied by German military forces beginning May 10, 1940. Capital, Amsterdam; seat of the Government, The Hague (transferred temporarily to London, England, on May 13, 1940). Sovereign, Queen Wilhelmina, who succeeded to the throne Nov. 23, 1890, and was crowned Sept. 6, 1898.

Area and Population. The area, including water belonging to municipal territories, is 13,515 square miles. The population on Feb. 28, 1940, was estimated at 8,833,000 (7,935,565 at the 1930 census). About 94 per cent of the people dwell in communities of 2,000 or more. The 1940 birth rate was 20.9 per 1,000 of population; death rate, including war losses, 9.9 per 1,000 (8.6 in 1939). Estimated populations of the chief cities on Jan. 1, 1939, were: Amsterdam, 793,222; Rotterdam, 612,375; The Hague ('s Gravenhage), 494,773; Utrecht, 163,589; Haarlem, 137,507; Groningen, 120,010; Eindhoven, 111,188; Tilburg, 95,142; Nijmegen, 94,102; Enschede, 90,291; Arnhem, 88,996; Leiden, 77,009.

Colonial Empire. The colonial possessions of the Netherlands are treated elsewhere in the YEAR BOOK under the headings of NETHERLANDS INDIES, CURAÇAO, and SURINAM. The total area is 793,354 square miles; total population was estimated at 70,760,000 in 1940.

Education and Religion. There is practically no illiteracy. The school enrollment in 1938-39 was: Infant schools, 213,338; elementary, 1,242,778; secondary, technical, and vocational, 271,298; high schools, 3,199; universities, 9,395. According to the 1930 census, there were 2,890,022 Roman Catholics, 2,732,333 members of the Dutch Reformed Church, 876,958 other Protestants, 111,917 Jews, 10,182 Jansenists, 169,575 belonging to other creeds, and 1,144,393 professing no religion.

Production. Agriculture, manufacturing, commerce, and mining are the principal industries. Yields of the chief crops in 1939 (in metric tons) were: Wheat, 416,500; barley, 146,000; rye, 603,500; oats, 449,200; potatoes, 3,000,000; beet sugar (1939-40), 217,600; linseed, 22,500; flax, 21,300. Livestock (1939): 2,817,314 cattle, 1,553,413 swine, 322,152 horses, and 689,500 sheep. The estimated 1940 mineral production was (in metric tons): Coal, 13,000,000; pig iron, 300,000; copper, 1,000; zinc (smelter) in 1939, 20,500. The 1939 output of rayon and staple fiber was about 11,000 metric tons; wood and straw pulp, 108,000; margarine, 71,000; shipping tonnage launched, 117,000. Bricks, clothing, boots and shoes, engines, boilers, machinery, cotton and linen fabrics, alcoholic beverages, tobacco products, are other leading manufactures. The German occupation led to extensive slaughtering of livestock and a marked decline in many lines of production.

Foreign Trade. Merchandise imports in 1939 were valued at 1,516,651,000 florins (1,414,768,000 in 1938); exports, 966,215,000 florins (1,039,156,000).

Textiles, iron and steel, cereals and flour, and wood were the chief 1939 imports, while textiles, coal, coke and briquets, butter, and tin were the main export items. For distribution of trade in 1939, see YEAR BOOK for 1940.

Finance. The 1940 budget estimates placed total receipts exclusive of loans at 770,005,000 florins (742,069,000 in 1939) and expenditures at 1,015,599,000 (1,008,790,000 in 1939).

The national debt on Dec. 31, 1940, was estimated at 5,410,258,000 florins, an increase of 1,192,674,000 florins since Dec. 31, 1939. Of the total debt, 3,668,335,000 florins represented the consolidated and 1,741,923,000 florins the floating debt. The floating debt (internal) reached 2,154,000,000 florins by July 31, 1941. Following the German occupation, the florin (guilder) was pegged to the reichsmark at the rate of 1 florin equals 1.33 reichsmarks, or \$0.532 at par.

Transportation. The Netherlands at the beginning of 1940 had some 2,278 miles of railway line, 16,031 miles of highways, and 4,817 miles of navigable rivers and canals. This transportation network was badly damaged during the hostilities of May, 1940, but was reported to have been repaired in considerable part by the end of that year. The Royal Dutch Air Line (K.L.M.) ended its European services—except for the new Lisbon-England route—upon the German invasion, but continued its operations in the East and West Indies, with headquarters in Batavia. K.L.M.'s former trunk line from Sydney, Australia, via Batavia to Europe was maintained only as far as Lydda, Palestine. There was an almost complete stoppage of the Netherlands overseas shipping trade in 1940; in 1939, 12,026 ships of 19,392,128 net tons entered the port of Rotterdam alone. The Dutch merchant marine under Allied control totaled 480 ships of 2,250,000 tons in July, 1941. Seventy-seven Dutch ships had been reported sunk or captured through enemy action.

Government. The Constitution of 1814, with its various amendments, vests executive power exclusively in the sovereign while legislative authority rests conjointly in the sovereign and the States-General (parliament). The States-General consisted of an upper chamber of 50 members, chosen by elected representative bodies in the several provinces for terms of six years, and of a lower chamber of 100 members elected for four years by general adult suffrage. In practice the cabinet was responsible to the States-General and the Premier was normally chosen by the sovereign from a political group commanding a parliamentary majority. The Premier proposed the members of his ministry to the sovereign. The composition of the Cabinet as reconstructed Sept. 3, 1940, was: Premier and Minister of Justice, Dr. P. S. Gerbrandy (Anti-Revolutionary party); Foreign Affairs, Dr. E. N. van Kleffens (non-party); Defense, Lt.-Col. A. O. H. Dijkhoorn; Education, Arts, and Sciences, G. Bolkenstein (Liberal); Economic Affairs, Dr. M. P. L. Steenberghe (Roman Catholic); Social Affairs, Dr. J. van dem Tempel (Social Democrat); Colonies and Finance, C. J. I. M. Welter (Roman Catholic); Waterways, J. W. Albarda (Social Democrat); Agriculture and Fisheries, Dr. A. A. van Rhijn (Christian Historical). See below for changes in 1941.

HISTORY

The Government-in-Exile. Under the vigorous leadership of Queen Wilhelmina, the refugee Netherlands Government in London pressed steadily ahead during 1941 with its efforts to mobilize Dutch and Dutch colonial men and resources for the overthrow

of Germany and restoration of the Netherlands' independence.

The Netherlands Legion organized in Great Britain and Canada in 1940 was strengthened by the calling to the colors of new classes of Netherlands citizens in British Empire countries and recruiting elsewhere. Reinforcements and new equipment were provided for the army of some 200,000 men in the Netherlands Indies. Naval forces under the Government's control in November, 1940, included 3 cruisers, several flotilla leaders, 7 modern destroyers, over 20 submarines, numerous minesweepers and mine-layers, a division of torpedo boats, and several gunboats. With additional ships obtained during 1941, the Royal Netherlands Navy aided the British fleet in Atlantic patrol work and in the defense of the Netherlands Indies. Of the Netherlands merchant fleet saved from the German invaders, it was reported in March, 1941, that about 180 deep-sea vessels and 250 coastal traders had been chartered by the British Ministry of Shipping and were operating regularly under the direction of a committee of Dutch shipowners.

On May 10, first anniversary of the German invasion of Holland, Queen Wilhelmina delivered a radio broadcast from London expressing confidence in an Allied victory and calling on her subjects everywhere for "resolute resistance." On the same day Dutch airmen attacked German bases in southern Norway in American-made planes. Seeking to prevent German exploitation of Dutch investments in the United States, the Government on January 28 asked American banks and brokerage houses not to comply with German-inspired requests for information concerning accounts held in the United States for corporations and individuals domiciled in the Netherlands. On May 22 a New York Supreme Court Justice ruled that United States courts must enforce decrees of the Netherlands Government-in-Exile affecting the large Dutch-owned assets in America. The suspension of interest and sinking-fund payments on the outstanding Netherlands debt, announced February 2, was designed to prevent such payments from falling into German hands.

Premier Gerbrandy joined with the representatives of the 13 Allied Governments in London on June 12, 1941, in signing an agreement to "continue the struggle against German or Italian aggression until victory has been won." In a radio broadcast on June 24, Queen Wilhelmina voiced her approval of the British policy of aiding Soviet Russia against Germany. The Netherlands Government never had maintained diplomatic relations with the Soviet Union. Nevertheless the Queen said that "if circumstances require, we will fight together with the people of Soviet Russia" against the "Satanic principles and the horrible acts of the Nazis." The Government-in-Exile also took a hand in diplomatic and military efforts to prevent Japanese domination of the Netherlands Indies (q.v.).

Some friction between the Government-in-Exile and the Colonial Government at Batavia was reported. Batavia authorities tended to ignore the Government in London in shaping policy with respect to Japan and the belligerent powers. Toward the end of January the Government-in-Exile sent ex-Premier D. J. de Geer on an official mission to the Netherlands Indies, apparently to iron out differences over the Batavia officials' powers and policies. De Geer proceeded as far as Lisbon, Portugal, but instead of flying on to Batavia boarded a German plane and returned to his ailing wife, whom he had left behind in the Netherlands when he fled to London in May, 1940. The Netherlands Govern-

ment then sent Foreign Minister van Kleffens to Batavia. During April and May he participated with representatives of the Batavia Government and with British, American, Philippine, Australian, and New Zealand officials in formulating joint plans to resist the Japanese and Axis threat of aggression in southeastern Asia and Malaya. See NETHERLANDS INDIES under *History*.

The Government-in-Exile was reorganized July 29. Vice Adm. J. T. Furstner became Navy Minister and H. Van Boeyen, Minister of Home and General Affairs, took over the War Ministry also. Insisting that Premier Gerbrandy consult them on all matters of general policy, the Ministers of Colonies and of Commerce and Industry resigned November 20. They were replaced by Dr. Hubertus J. van Mook and Peter M. Kerstens, respectively.

Netherlands subjects living in the South American countries were called up for military service in August. On September 14 it was announced that the Government-in-Exile had arranged to resume payment on that part of the Netherlands debt that remained "indisputably free of enemy control." By a decree of October 1, it levied an income tax on Netherlandsers the world over in place of the former "voluntary tax." Under authorization by the British Parliament, the High Court of the Netherlands Maritime Tribunal was opened in London November 3, in addition to lower courts in six British ports. They assumed jurisdiction over offenses committed by non-British nationals aboard Netherlands merchant ships.

Upon invitation of the Netherlands Government-in-Exile, United States troops were landed in Surinam (q.v.) on November 24 for the protection of that colony and its valuable bauxite mines. Following the Japanese attack on British and American possessions in the Pacific and Far East, the Government-in-Exile declared on December 8 that a state of war existed with Japan. On December 22 it declared the Kingdom of the Netherlands to be at war with Italy.

German Rule in Holland. Meanwhile the Netherlands (continued to be ruled as a conquered province by Dr. Arthur Seyss-Inquart and Maj. Gen. Friedrich Christiansen, who were appointed by Hitler as civil and military governors, respectively, on May 30, 1940. The Germans in 1941 intensified their systematic exploitation of Dutch economic and financial resources and resorted to sterner measures of repression to crush the growing hostility and resistance of the Netherlandsers (see YEAR BOOK for 1940, p. 541, for background).

To help meet the costs of the army of occupation (estimated at 250,000 men) and the German administration, a 500,000,000-florin 4-per-cent loan was issued early in the year. The prospectus of the loan asserted that if it was not subscribed a compulsory 2½ per cent annuity levy would be enforced. Successive steps were taken to bring Dutch industry and finance under German ownership. Jewish-owned businesses in the Netherlands were transferred to Germans under the sweeping Aryani-zation decree of March 13.

The last restrictions on foreign-exchange transactions and payments between the Netherlands and the Reich were abolished April 6. Following the virtual elimination of mutual tariff barriers the previous December, this speeded Holland's incorporation in the German economic system. German economic policies encouraged purchases of Netherlands securities for German account, while obstructing the withdrawal of Dutch capital from Germany. A decree of March 1 required all residents of the Netherlands to report to the Foreign Exchange In-

stitute within 14 days on all their foreign properties and holdings. In many cases the owners were then forced to seek repatriation of their foreign holdings in order to bring them under German control.

Another decree of May 26 required all Netherlanders, male and female, between 18 and 25 years of age to serve six months in the state labor service. Jews were excluded. The country was stripped of materials needed to maintain German production for war purposes and many Netherland factories were obliged to manufacture armaments and war supplies under the direction of German technicians. Livestock and food and clothing reserves were depleted to help maintain the German standard of living, while the rationing of food and clothing in the Netherlands was extended. It was estimated in May, 1941, that 22,000,000 out of 28,000,000 hens had been slaughtered along with 750,000 out of 1,550,000 pigs. Stocks of butter, eggs, cheese, cream, beans, rice, coffee, tea, tobacco, and cocoa were shipped to the Reich. Payment was made with florins obtained from Netherland banks in exchange for German Treasury bills. In June the Netherlanders were given until August 10 to turn in all articles of copper, nickel, tin, and lead. Imprisonment up to five years was threatened for those failing to comply.

Eight political parties, controlling some 90 of the 100 seats in the Lower Chamber of the States-General elected in 1937, were dissolved by Seyss-Inquart on July 7 because they adopted an attitude "directed against the interests of the occupying power." There remained only A. A. Mussert's Dutch Nazi party, a rival National Socialist group under Ridder van Rippard, the unimportant Clerical Front, and the Netherlands Union, formed after the German occupation, which offered Germany economic collaboration in return for political independence and spiritual freedom.

The Netherlands Union's uncompromising opposition to the Dutch Nazis and its refusal to endorse the German campaign against Russia brought it into disfavor with the German authorities. Its publication was banned and its other activities were restricted in July. On December 14 Seyss-Inquart announced that Mussert's Dutch Nazi party would thereafter be the only lawful political organization in the Netherlands.

In a speech at Cologne, Germany, on November 15 Dr. Seyss-Inquart outlined Hitler's political program with respect to the Netherlands. He said that no single nation in the "new European order" could expect complete independence. However he declared it was Hitler's desire to incorporate the Netherland people "in the common Germanic State as comrades, enjoying full equality with the Germans." The common State, he said, pre-supposed a common defense, unified economic system, and centralized control of foreign relations. In so far as the Netherlanders merited opportunities for spiritual and cultural development "of their own racial substance," they would receive them. He asserted the Dutch Nazis under Mussert had assumed responsibility for "educating the Netherland people for its future comradeship with the Germans."

The German decree of August 12 virtually scrapped the remaining autonomy of the Dutch provincial and municipal councils. In protest against this measure, the burgomasters of many cities and towns resigned. Their places were filled by Nazi appointees.

The Netherland press was reduced to complete servitude by progressively harsh treatment of publications hostile or passive toward the occupation. A number of prominent anti-Nazi editors were ar-

rested, including former Premier Hendrik Colijn, editor of the Calvinist daily *De Standaard*. Journalists were barred from their profession unless they joined the Nazi-created Chamber of Journalists. Fifty-three of the kingdom's 140 daily newspapers and 470 of 600 other newspapers were closed by the authorities October 1, ostensibly because of the paper shortage. Out of 650 periodicals, 520 were suppressed.

Spokesmen and anti-Nazi leaders of both the Catholic and Protestant churches were subjected to arrest, imprisonment, and persecution. The last of the Catholic trade unions were dissolved in October. Inexorable pressure to Nazify the Dutch educational system continued. When students of Leyden University staged a strike in protest at the dismissal of a Jewish professor, Dr. Seyss-Inquart in November ordered the suspension of all examinations. The school authorities then decided to close the university. In mid-September the German authorities ordered the confiscation of properties of the exiled Queen Wilhelmina and all members of her family. Persecution of Dutch Jews became more rigorous, and numerous deaths among young Jews confined in Nazi concentration camps were reported. Food became more and more scarce and rations were progressively reduced. It became virtually impossible to buy new shoes or clothing.

On July 12, Dr. Seyss-Inquart urged Netherlanders to volunteer for service with the German armies against Russia. Berlin announced August 18 that 7,000 Netherlanders were already on the Russian front and that 3,000 more were preparing to go. Most of the volunteers were members of the Dutch Nazi party.

Dutch Resistance Stiffens. Efforts to force the Netherlanders into the German political, economic, and cultural mold served to stiffen resistance to German rule. In January the German authorities threatened much more severe reprisals unless anti-German agitation and sabotage stopped. Early in February the German economic director for the Netherlands warned that he would take "measures" unless the existing boycott of German business men was ended.

The passive resistance hitherto offered to the Germans gave way to open rebellion in Amsterdam beginning February 9. The Netherland Nazis, who had aroused deep enmity by attempting to carry out the German anti-Semitic policies, were attacked while parading through the Jewish quarter of the city. Many non-Jews, especially stevedores from the dock section, joined in the anti-Nazi rioting. A number of Nazis and police were beaten, one of them fatally, and shop windows of Nazi sympathizers were broken. On February 13 the German authorities ordered all non-Jews out of the Jewish quarter around Waterloo Square, and two days later Dr. Seyss-Inquart again restricted the number of Jews in Netherland universities.

These measures and the intervention of the police on behalf of the Nazis caused a spread of the disturbances from Amsterdam to other cities and towns. In Amsterdam a wave of sympathetic strikes closed many factories and interrupted the street car, gas, and electric services. Acts of sabotage in Antwerp brought the imposition of a 10 p.m. curfew there on February 21. Five days later there was a clash between police and anti-German demonstrators in Amsterdam in which five civilians were killed, an unstated number wounded, and many others arrested.

General Christiansen immediately decreed martial law throughout the Province of North Holland. All parades, demonstrations, and street assemblies

were forbidden. Political activity of every kind was banned, and all strikers were ordered back to work by the following day. A penalty of 15 years' imprisonment was imposed for persons provoking strikes or discontinuing work. The death sentence, long banned in the Netherlands, was revived in cases of disruption of vital war industries. On May 21 penalties as severe as life imprisonment or death were decreed to enforce a complete ban on strikes and lockouts.

These measures brought the more violent outbreaks to an end. Nevertheless General Christiansen on March 1 fined the city of Amsterdam 15,000,000 florins (nearly \$8,000,000) for the disorders. The cities of Hilversum and Zaandam were likewise fined. On March 3 a Jew was executed by a firing squad, allegedly for spraying acid on Gestapo agents during the disorders, and many other demonstrators were sentenced by military courts to prison terms of 10 years or more. Reich Commissioner Seyss-Inquart on March 4 issued a compulsory labor service decree under which many citizens were drafted to guard German military signposts against defacement by Netherland youths. The same decree authorized the government to forbid workers to change their jobs. On the same day the mayors and aldermen of the cities of Amsterdam, Hilversum, and Zaandam were replaced by commissioners appointed by the occupational authorities. At the same time Dr. Seyss-Inquart appointed a commissioner to "clean up" (Nazify) about 100,000 Netherland sports, cultural and professional organizations.

A German military court sitting at Amsterdam sentenced 18 Netherlanders to death and 19 others to long prison terms on March 5. They were accused of leading a secret society, known as Les Gueux, in acts of terrorism, sabotage, and espionage against the German occupational forces. The death in the German concentration camp at Sachsenhausen of Major Gen. H. Van Tongeren, for many years Grand Master of the Netherland Grand Lodge of Free Masons, was announced in May.

The effort of the German authorities and their Netherland Nazi allies to bring the churches into line likewise met with stubborn opposition. The Catholic Episcopacy in a pastoral letter read in the churches on January 26 reiterated its decision to deny extreme unction and Catholic burial to "Liberals, Socialists, Communists, and National Socialists." Membership in the Nazi movement was forbidden to Catholics. The Germans and Dutch Nazis replied with severe retaliatory measures.

Steps were taken to force a larger measure of collaboration in other fields of activity. Dr. L. J. A. Trip, president of the Netherland Bank since 1931 and Secretary General of Finances since the German invasion, resigned both positions on March 20. The Netherland Boy Scout movement was officially abolished April 9, following dissolution of the Netherland Salvation Army.

On the eve of the first anniversary of the German invasion, Dr. Seyss-Inquart banned the wearing or public display of pictures or badges bearing the likeness of Queen Wilhelmina or other living members of the House of Orange. A similar ban was placed on the old Netherland colors of red, white and blue and also on orange, the color of the exiled ruling family. No public ceremonies, services, or demonstrations were permitted on May 10. The controlled press observed the anniversary of the German onslaught by calling upon Netherlanders and Germans to collaborate like brothers in "a great German community." "Jews and intellectuals" were blamed for the Hollanders' failure to do this.

Anti-German activities gained rapid headway following the outbreak of the Russo-German conflict in June. The occupation authorities replied by extending the scope and severity of punishment for "endangering public order and the occupation forces." Execution or long imprisonment was ordered for relatively insignificant misdemeanors. By a decree effective October 17, offenses punishable by death were extended to include "anti-German acts, preparation and distribution of anti-German publications; infringement of economic regulations and price measures; withholding, hoarding, or distribution of goods required for the common effort." A special division of the German High Court was set up in the Netherlands to deal with these "sabotage" cases. In September it was announced that the death penalty would be applied in all cases of Communist activity. A number of Netherlanders were executed for aiding and concealing British fliers who made forced landings in Holland.

See GREAT BRITAIN and JAPAN, under *History*; LABOR CONDITIONS under *Employment and Wages*; LEND-LEASE ADMINISTRATION; NAVAL PROGRESS; NEWSPAPERS and MAGAZINES.

NETHERLANDS GUIANA. See SURINAM.

NETHERLANDS INDIES. A group of large islands in the East Indies forming a colony of the Netherlands. Capital, Batavia, on the island of Java.

Area and Population. The area, population at the 1930 census, and population density of the various islands is shown in the accompanying table.

Group of islands	Area, sq. miles, 1930	Population, 1930	Density per sq. mile
Java and Madoera	51,032	41,718,364	817
Sumatra	164,148	7,677,826	47
Riouw-Lingga	12,235	298,225	24
Bangka	4,611	205,363	45
Billiton	1,866	73,429	39
Borneo:			
West district	56,664	802,447	14
South and east districts	151,621	1,366,214	9
Island of Celebes			
Celebes	38,786	3,093,251	80
Manado	34,200	1,138,655	33
Molucca Islands and New Guinea	191,682	893,400	5
Timor Archipelago	24,449	1,657,376	68
Bali and Lombok	3,973	1,802,683	454
Total	735,268	60,727,233	83

The estimated population in 1940 was 70,476,000, including 68,832,000 natives. Java and Madoera had 48,416,000 inhabitants; the Outer Provinces, 22,060,000. Over 92 per cent of the population is rural. The 1930 census populations of the chief cities, all of which were in Java except as noted, were: Batavia, including Meester Cornelis, 533,015 (606,800 in 1940); Socrabaja (Surabaya), 341,675 (390,700 in 1940); Semarang, 217,796; Bandoeng, 166,815; Soerakarta, 165,484; Djokjakarta (Jogjakarta), 136,649; Palembang, in Sumatra, 109,069.

Education and Religion. According to the 1930 census, there were 4,296,579 literate persons, of whom 400,877 were able to write Dutch. In 1939 there were 17,291 village schools with 1,839,386 pupils, 3,481 other primary schools (public and private) with 450,684 pupils, 35 secondary schools with 7,795 pupils, and various vocational and special schools. Higher education is given in the Technical College, Bandoeng, and in colleges of law, medicine, agriculture, science, literature, and philosophy at Batavia, combined into a university in 1941.

The natives are predominantly Moslem, but

there are several million converted Christians and Animists and about a million Buddhists.

Production. Agriculture and mining are the chief occupations, but manufacturing is expanding rapidly. The total area harvested by natives in Java and Madoera in 1939 was 22,087,950 acres; by foreign (European and Chinese) estates, 2,978,981 acres. The islands normally produce 90 per cent of the world's quinine; of pepper, 79 per cent, kapok, 70 per cent; rubber, 38 per cent; copra, 30 per cent; oil palm products, 20 per cent; tea, 17 per cent; coffee, 6 per cent; sugar, 5 per cent. Estimated production of the chief crops was (in metric tons): Cane sugar (Java only), 1,730,145 in 1941 (1,605,057 in 1940); coffee, 107,100 in 1940; rubber (exports), 544,800 in 1940 (378,000 in 1939); rice, 6,138,800 in 1939; cinchona, 12,391 in 1939, tobacco, 39,000 in 1939; tea, 83,800 in 1939; copra, 537,100 in 1939; ground nuts, 270,800 in 1940 (Java and Madoera only); palm oil, 243,683 in 1939. Cacao output was 3,419,335 lb. in 1940. Livestock (1939): 4,576,600 cattle, 703,637 horses, 3,246,918 buffaloes.

Mineral production in 1940 was (in metric tons): Petroleum, 7,944,000, coal and lignite, 1,872,000, tin, 45,600 (metal content of ore exported); manganese, 5,000 in 1939; bauxite (crude ore), 245,400 in 1938. Gold production was 2,525 kilograms in 1939. More than 6,000 factories and workshops are normally engaged in processing agricultural and mineral products for export. Expansion of manufacturing began during the world economic depression of 1929-35 and was furthered by the European War (see *History*).

Foreign Trade. Imports in 1940 totaled 444,300,000 guilders (469,340,000 in 1939), exports, 873,600,000 guilders (739,600,000 in 1939). Rubber accounted for 40 per cent of the total 1940 export trade. Value of chief 1940 exports (in millions of guilders): Rubber, 332.3; tin, 81.6; tobacco, 38.5; tea, 48.9; cinchona bark, 27.6. Trade was carried on mainly with the United States (see *TRADE, FOREIGN*), the British Empire, and Japan.

Finance. Budget estimates for 1941 anticipated receipts of 694,140,035 guilders and expenditures of 829,304,901. The large deficit was due to heavy defense expenditures (three times the pre-war level), expansion of educational facilities, etc. The public funded debt on Jan. 1, 1941, totaled 1,211,965,000 guilders. The colony became a de facto member of the sterling bloc under an Anglo-Dutch monetary accord of June, 1940. The guilder was pegged at 7.60 to the pound sterling and 1875 to the U.S. dollar (equivalent to \$0.5284). Average exchange value of guilder, \$0.5501 in 1938, \$0.5334 in 1939.

Transportation. Steam railways in 1940 extended 4,070 miles (2,701 miles state-owned), the greater part in Java; highways (1940), 42,546 miles; inter-island airways (K.N.I.L.M.), 8,065 miles of route (1939) covered by nine services (16 in 1941). On Dec. 21, 1940, the company opened the first air service into the interior of Netherlands New Guinea. During 1940 the company carried 27,033 passengers, 202,439 kilograms of freight, and 75,205 kilograms of mail on regularly scheduled flights. The K.L.M. system (Royal Aviation Co.) moved its headquarters to Batavia following German occupation of the Netherlands in May, 1940, and continued to operate the Batavia-Lyddá (Palestine) section of its Amsterdam-Batavia trunk line.

Government. The Governor General and his advisory council are appointed by the Queen of the Netherlands. The Volksraad (assembly of elected and appointed delegates) has limited legislative

powers. Governor General in 1941, Jhr. Dr. A. W. L. Tjarda van Starckenborgh Stachouwer (appointed June 8, 1936).

HISTORY

War with Japan. The long-expected Japanese effort to seize control of the Netherlands Indies and their rich natural resources began on Dec. 8, 1941 (Batavia time). See *WORLD WAR*. However the military phase of the Japanese expansionist program, which opened with a surprise attack upon Anglo-American-Dutch possessions in the Western Pacific and Malaya, was preceded by intense efforts to dominate the Netherlands Indies by political pressure and economic infiltration. The Government and peoples of the Netherlands Indies resisted both the military and non-military phases of Japanese aggression with the same tenacity and determination.

Economic Negotiations. The unsuccessful negotiations opened in Batavia by a Japanese economic mission in September, 1940 (see *YEAR BOOK* for 1940, p. 543), were renewed early in 1941 by Keikichi Yoshizawa, former Japanese Foreign Minister and newly appointed head of the special mission. He gradually expanded the Japanese demands to include "permission to explore the Outer Islands, concessions, exploitation of undeveloped areas, permits of entry for professional men and small traders, the establishment of an air line from Japan, and mining and fishing rights."

He succeeded in obtaining nothing except the renewal for one year in May of the 1940 contract under which Dutch, British, and American oil interests in the Netherlands Indies undertook to sell Japan 1,800,000 tons of oil supplies annually. The Netherlands Government-in-Exile in London on February 1 flatly refused to permit "incorporation of the Netherlands Indies in a new order under the leadership of any power whatsoever." On February 8 Batavia authorities introduced an export licensing system to prevent raw materials from reaching "enemy" nations. This curbed shipments to Japan, which was believed to be forwarding war materials via the U.S.S.R. to Germany. On March 10 the Batavia Government suspended shipments of many export products for one month to make possible emergency shipments of tin, rubber, and other war materials to the United States.

In June, 1941, the Japanese-Netherlands Indies negotiations reached an impasse when Dutch officials rejected a virtual ultimatum from Tokyo. Shortly after Yoshizawa returned to Japan, the Nipponese advance into southern Indo-China led to the imposition of an economic blockade against Japan by the United States and the British Empire. The Netherlands Indies joined in this blockade by impounding Japanese funds on July 28 and suspending operation of the oil agreement described above. The move was taken after consultation with London and Washington, with the clear understanding that it involved risk of war. The virtually complete stoppage of the islands' important trade with the Japanese Empire was offset in large part by increased trade with the United States and by British purchases of Netherlands Indies products. In December the British Food Ministry ordered 48,000,000 lb. of tea from the Netherlands Indies for delivery during 1942.

Japanese Exodus. As early as March Tokyo began the orderly withdrawal of Japanese women and children from the Netherlands Indies. In June Batavia authorities allowed 400 German nationals, imprisoned upon the German invasion of Holland in 1940, to sail on a Japanese ship for Shanghai. In

November Japanese men began to join the exodus of women and children.

Defense Preparations. These and other clear indications of Tokyo's hostile intentions were not lost upon the Batavia authorities. Precautions against a treacherous attack were taken well in advance of the surprise Japanese blow of December 8. As a result the islands' defenses survived the initial Japanese assaults virtually intact. On December 18 Dutch forces joined Australian units in occupying Portuguese Timor, over protests from Lisbon, to prevent the Japanese from seizing Timor as an advance base of aggression (see PORTUGAL under *History*).

The effectiveness of naval and air operations by the small Netherlands Indies forces during the first weeks of the war testified to the efficiency of the preparations made by the Batavia authorities. In April the Dutch, British, and American political and military heads in the Far East began the task of coordinating their defense plans and preparations (see BRITISH MALAYA under *History*). Through successive supplementary defense budgets passed by the People's Council (Volksraad) at Batavia, there was a steady expansion of local military, naval, and air units.

At the outbreak of war, the Netherlands Indies were estimated to have an army of 120,000 men (four-fifths Indonesians); a navy of 4 cruisers, 12 destroyers, 18 submarines, and over 50 torpedo boats; and an air force of more than 200 bombers and 200 fighter planes. New defenses had been established on outlying islands. Preparations were made to destroy oil wells and installations in the event of invasion. Construction of new arms and munitions factories was begun in connection with the general industrialization program. Compulsory military service, in effect for Hollanders since World War I, was extended to the native population beginning September 25.

The defense program received a setback October 13 when Licut. Gen. G. J. Berenschot, commander in chief of the Netherlands Indies Army, was killed in an air crash. The unofficial alliance between Dutch, British, American, Australian, Chinese, and New Zealand forces was placed in operation immediately after the outbreak of war. Alarmed by the Japanese advance, Batavia authorities toward the end of December joined the Australian Government in urgently asking the United States for immediate reinforcement and support of Allied forces in Malaya.

Internal Politics. The demand for greater political autonomy made by Dutch colonial officials and native leaders alike in 1940 received formal recognition from the Netherlands Government-in-Exile in 1941. On July 30 Queen Wilhelmina stated that immediately after the liberation of the Netherlands a review of the Constitution and readjustment of relations with the Dutch overseas territories would be necessary. She announced that a commission would be established, with members drawn from "all parts of the realm" to assist in the preparation of these changes. Most of the spokesmen for native political groups praised the Queen's policy, but a few called for immediate constitutional reforms to improve their political status. Soon afterward Batavia authorities announced that the special committee set up in September, 1940, to study political changes and improvements in the Netherlands Indies had completed its report, which was receiving the close consideration of the Government.

On August 26, 24 native members of the Volksraad requested a definite statement from the Netherlands Government in London on the Roosevelt-

Churchill Atlantic Declaration (see ATLANTIC DECLARATION) and its application to the Indonesian population. The Netherlands Government on November 13 replied that it had formally accepted the Atlantic Charter and was ready to apply its principles "as rules of conduct inside the State." It stated that "a post-war investigation of constitutional relations . . . will give the Government, as well as those governed, an opportunity to form a clear idea of the stage of development which has been reached, and to plan reforms."

After the Japanese attack began, all of the native political parties issued a joint declaration urging their adherents to "render all possible assistance to the Government," carry out its orders and instructions, and "defend themselves against any foreign attack."

See CHINA, JAPAN, and NETHERLANDS, under *History*; CHEMISTRY, INDUSTRIAL; WORLD WAR.

NETHERLANDS WEST INDIES. The colonial possessions of the Netherlands in the West Indies, comprising (1) CURAÇAO and (2) SURINAM, or Dutch Guiana. See separate article on each colony.

NEUTRALITY. For amendment of the Neutrality Act, see UNITED STATES under *Legislation*. For developments in other countries, see ARGENTINA, BOLIVIA, BRAZIL, BULGARIA, CHILE, COLOMBIA, COSTA RICA, CUBA, DENMARK, ECUADOR, EGYPT, EIRE, FINLAND, FRANCE, GUATEMALA, HAITI, HONDURAS, HUNGARY, IRELAND, NORTHERN; MEXICO, NICARAGUA, PANAMA, PARAGUAY, PERU, PORTUGAL, SALVADOR, EL; SOUTH AFRICA, SPAIN, SWEDEN, SWITZERLAND, TURKEY, URUGUAY, VENEZUELA, and YUGOSLAVIA, under *History*; PAN AMERICANISM. FOR NEUTRALITY PATROL, see COAST GUARD, U.S.

NEVADA. A mountain State. Area: 110,540 sq. mi., including 738 sq. mi. of inland water. Population: (1940 census) 110,247. The urban population comprises 39.3 per cent of the total (U.S. average, 56.5 per cent), non-white population, 5.7 per cent (U.S. average, 10.2); elderly (65 years and over), 6.1 per cent. Nevada ranks sixth among the States in area, 48th in population, and 48th in density, with an average of 10 persons per square mile. The capital is Carson City with 2,478 inhabitants; largest city, Reno, 21,317. There are 17 counties and one city of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Mildred Bray, Superintendent of Public Instruction, there were 24,052 pupils enrolled in the public schools of Nevada during the school year 1940-41, 17,798 in kindergartens and elementary schools and 6,254 in secondary schools. Instructional staff numbered 926 and received an annual average salary of \$1,650. Total expenditures for the year, excluding capital outlay, were \$2,457,946.37. For higher education, see Nevada under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 5,189, of which 3,134 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 45,708; 35,264 were private and commercial automobiles, 109 busses, and 8,735 trucks and tractor trucks. Gross motor-fuel consumption was 42,788,000 gal. Net motor-fuel tax receipts were \$1,507,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$313,000.

Railways of all classes extended 1,932 miles (Dec. 31, 1939) .82 per cent of the total mileage in the United States. Class I steam railways (974 miles) reported 917,236 tons of revenue freight originating in Nevada in 1940 and 1,367,107 tons terminating in Nevada. There are 22 airports and landing fields in the State (10 lighted fields) and one seaplane anchorage. On July 1, 1941, according to the Civil Aeronautics Authority, there were 67 civil aircraft in the State and 238 commercial and private pilots (213 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 452,800, as compared with 447,300 acres in 1940. According to the latest census, there are 3,573 farms, valued at \$47,594,384, averaging 1,059.4 acres each. Farm population numbered 15,842 or 14.4 per cent of the total. The leading crop was hay, worth \$5,129,000 and producing 664,000 tons.

Manufacturing. According to the 1939 Census of Manufactures, there were 105 manufacturing establishments in Nevada, employing 1,093 wage earners who received \$1,642,397 in wages for the year. The total value of products was \$20,581,713; value added by manufacture, \$11,727,506.

Mineral Production. Leading products are: Copper, of which 157,620,000 lb. valued at \$18,441,540 were produced in 1941; gold, 372,300 fine oz., valued at \$13,030,500. Gold production declined about 3 per cent as compared with the previous year, reversing a trend that had continued since 1938. Copper output increased slightly, being greater in quantity than in any year since 1928. The total value of mineral production in 1939, according to the U. S. Bureau of Mines, was \$34,670,879 or .82 per cent of the total for the United States. See GEOLOGICAL SURVEY.

Trade. According to the 1940 census there were 176 wholesale establishments in Nevada, employing 733 persons, reporting net sales for 1939 of \$23,249,000 and annual pay roll of \$1,296,000. There were 2,045 retail stores with 5,822 employees, reporting sales of \$61,828,000 and pay roll of \$7,204,000. Service establishments numbered 596, employing 832 persons for \$970,000 per year, and reporting a business volume amounting to \$3,355,000. The leading business center of the State is Reno which reported retail sales of \$22,873,000 and \$1,846,000 receipts for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Nevada was \$2,393,000. Under the Social Security program, financed by Federal funds matching State grants, 2,317 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$26.61 (U. S. average pension, \$21.08); 262 dependent children in 110 families (figures estimated) received a total payment of \$2,705; and an estimated 17 blind persons received approximately \$528. General relief cases, which are supported by State and local funds only, numbered 426 and received \$17.46 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 278 (\$18,000); NYA student work program, 215 (\$1,000); NYA out-of-school work program, 380 (\$7,000); WPA, 1,231 (\$83,000); regular Federal construction projects, 2,014 (\$276,000).

Legislation. The Legislature convenes in regular session on the third Monday of January in odd years. It is composed of 17 Senators (6 Democrats,

10 Republicans, and one Independent in 1941) and 40 Representatives (26 Democrats, 13 Republicans, and one Independent). The 1941 legislature enacted 212 measures; 19 were vetoed but one of those, a horse race betting bill, was passed over the veto. Following is a list of Senate and Assembly measures of general interest, which became law (extracted from a complete list of measures signed, *Nevada State Journal*, April 1, 1941).

S. B. 13—Setting maximum payments to old-age pensioners at \$40 per month

S. B. 18—Uniform trust accounting act.

S. B. 22—Sets up a State boxing commission.

S. B. 30—Authorizing cities and counties and regional areas to enact zoning ordinances.

S. B. 31—New general insurance code

S. B. 37—Authorizing \$265,000 bond issue for constructing new prison facilities at Nevada State prison.

S. B. 59—Requiring licensing of contractors

S. B. 60—Requires temporary markers be placed on all graves.

S. B. 84—Authorizes unappropriated expenditures by the State not to exceed \$10,000 in meeting emergencies which may be brought about by the present world situation

S. B. 121—Prohibiting dissemination of horse racing news and fixing penalty

S. B. 118—Requires any person taking employment in Nevada to buy Nevada license plates.

S. B. 122—(Fish and game)—Providing for licenses for fur dealers

S. B. 124—Takes highway patrol from highway department jurisdiction and places it under public service commission

A. B. 5—New probate code

A. B. 15—Repeals act prohibiting giving away stamps, coupons, etc., with merchandise

A. B. 32—Consolidating the Nevada unemployment compensation division and employment service division into the employment security department

A. B. 46—Requiring hunters to secure written permits before they may hunt upon fenced private lands

A. B. 55—Placing personnel of old age pension system in Nevada under merit system

A. B. 61—Provides machinery for proving persons once declared insane to be sane again

A. B. 72—Gives veterans full \$1,000 exemption on community property

A. B. 88—Provides for reemployment of drafted men if they apply within 40 days of discharge

A. B. 96—Regulating use of fumigating materials

A. B. 102—Relating to the adoption of children

A. B. 117—Providing for examination of pregnant women for syphilis Effective July 1, 1941

A. B. 136—Authorizes district courts to establish dates of birth, place of birth and parentage.

A. B. 143—Raises the age of orphans eligible for county aid to 18 from 16

A. B. 158—Provides intermediate and common labor prevailing wage scales must be established for public works

A. B. 163—Amending unemployment compensation act to prevent fraudulent claims

A. B. 181—Amending act relating to death certificates

A. B. 208—Authorizes corporations to issue special stocks.

A. B. 251—Authorizes transfer of Boulder Dam State park to Federal government in return for other Federal lands

A. B. 259—Uniform auto drivers' licensing act

A. B. 282—Providing for no court fees in estates of \$400 or under

A. B. 299—Fixing State tax levy at 6.95 cents per \$100 valuation for next two years.

Finances. Total tax collections in Nevada for the fiscal year ending in June, 1941, were \$4,840,000 (1940: \$4,657,000). Total sales taxes amounted to \$1,876,000, including motor fuel, \$1,671,000. Taxes on specific businesses ran to \$465,000, general and selective property, \$1,147,000, unemployment compensation, \$987,000. Cost payments for the operation of general government totaled \$4,627,000 in 1939, the latest year available. (Revenues for the general government for that year were \$8,867,000.) Cost of operation per capita was \$42.84 Total gross debt outstanding in 1941 was \$542,000, as compared with \$1,634,000 in 1932.

Officers and Judiciary. The Governor is E. P. Carville (Dem.), inaugurated in January, 1939, for a four-year term; Lieutenant Governor, Maurice J.

Sullivan; Secretary of State, Malcolm McEachin; Attorney General, Gray Mashburn; State Treasurer, Dan W. Franks; State Auditor, D. G. LaRue; State Comptroller, Henry C. Schmidt. Chief Justice of the Nevada Supreme Court is E. A. Ducker; there are two associate members elected by popular vote for six-year terms. See **PLANNING**.

NEVIS. See **LEEWARD ISLANDS**.

NEW BRUNSWICK. A maritime province in eastern Canada. Area, 27,985 square miles. Population (1941 census), 453,377. Vital statistics (1940): 11,675 living births, 4,977 deaths, 4,829 marriages. Chief cities (1941 census): Fredericton, capital (9,905), Saint John (50,084), Moncton (22,411), Edmundston (7,028), Campbellton (6,649). Education (1939): 102,185 students in schools and colleges.

Production. The gross value of agricultural output for 1940 was \$31,090,000 (field crops \$18,446,000, dairy products \$5,457,000, farm animals \$3,656,000, poultry products \$1,640,000, fruits and vegetables \$1,242,000, fur farming \$463,000). The chief crops in 1941 were oats 6,200,000 bu. (6,507,000 in 1940), potatoes 286,800 tons (344,800), roots 146,050 tons (167,000), hay and clover 896,000 tons (944,000). Livestock (1940): 214,100 cattle (including 153,100 milk cows), 107,000 sheep, 97,100 hogs, 54,950 horses, 1,273,700 sheep. Fisheries (1940): 72,895 tons, which had a marketed value of \$4,966,000 (sardines \$1,883,000, lobsters \$856,800, herring \$750,000, smelts \$442,000). Fur production (1938-39): 94,790 pelts worth \$1,361,168. Forestry products (1939) were valued at \$12,765,000.

Mineral output for 1939 was valued at \$3,949,433 (coal \$1,566,359, natural gas \$292,403, gypsum \$134,286). Manufacturing (1939): 803 factories, 14,501 employees, \$27,041,195 net value of products.

Government. Finance (year ended Oct. 31, 1940): \$12,459,011 for revenue and \$11,921,467 for expenditure. Budget estimates (1941): \$10,139,855 for revenue and \$10,108,554 for expenditure. Net funded debt (Oct. 31, 1940), \$92,987,744. The executive authority is vested in a lieutenant governor who is advised by a ministry of the legislative assembly, the latter consisting of 48 members elected for a five-year term by the voters (29 Liberals and 19 Conservatives were elected at the provincial general election of Nov. 20, 1939). Ten senators (appointed for life) and 10 elected commoners represent New Brunswick in the Federal parliament at Ottawa. Lieutenant Governor, W. G. Clark (appointed Mar. 5, 1940); Premier, J. B. McNair (Liberal). See **CANADA**.

NEW CALEDONIA. A French island colony in the South Pacific, 850 miles east of Australia. Its dependencies consist of the following islands: Bélep, Chesterfield, Fortuna and Alofi, Huon, Isle of Pines, Loyalty, Wallis, and Walpole. Total area, 7,336 square miles; total population (Jan. 1, 1939), 55,000. Noumea (capital), 11,108 inhabitants.

Production and Trade. The main agricultural products are coffee, copra, cotton, manioc, maize, tobacco, bananas, and pineapples. Mineral production included nickel (17,500 metric tons, metal content of ore, in 1940), crude chromite (55,790 metric tons, 1940), cobalt, iron, and manganese. Trade (1938): 158,571,000 francs for imports and 146,453,000 francs for exports (franc averaged \$0.0288 for 1938; \$0.0251, 1939). The administration of New Caledonia is under the control of a

governor, assisted by a privy council and an elected general council. On Sept. 23, 1940, New Caledonia declared its allegiance to the "Free French" cause of General de Gaulle (see **YEAR BOOK** for 1940; p. 546). Governor, Henri Sautot (appointed Sept. 19, 1940).

History. It was announced on June 18, 1941, that a contingent of volunteers from New Caledonia had joined the first battalion of the French Pacific Expeditionary Force.

NEWFOUNDLAND. An island lying between the Gulf of St. Lawrence and the Atlantic Ocean. Its dependency, Labrador, lies north of the Gulf of St. Lawrence, between Quebec and the Atlantic. Newfoundland, with Labrador, forms a part of the British Empire. Capital, St. John's. Area (exclusive of Labrador), 42,734 square miles. Population, 294,800 as estimated for Jan. 1, 1939. Immigration in 1938, 9,219, emigration, 8,668. Chief towns and their populations at the census of 1935: St. John's, 54,886; Bonavista, 4,022; Harbour Grace, 2,215; Grand Falls, 4,244; Corner Brook, 6,374; Carbonear, 3,367; Twillingate, 3,203; Burin, 2,277; Grand Bank, 2,209. Area of Labrador, 118,400 square miles; population (1935), 4,716; chief settlement, Battle Harbor.

Education. Among adults, between 7 and 10 per cent are illiterate. Schools (mainly denominational, with public support) numbered 1,175 in 1939; pupils, 65,893; there were more Anglican schools, and more Roman Catholic pupils, than of any other single denomination. In 1935, 93,925 of the population were reported to be Roman Catholic; 92,709, Anglican, 76,134, of the United Church, 18,054, in the Salvation Army; 1,460, Presbyterian; and 7,306, of other denominations.

Production. Cod fishing is the chief occupation, engaging 35,018 out of some 55,000 whose occupations were reported for 1935. The fish catch in 1940 was about 900,000 quintals (of 112 lb.). The annual seal hunt in 1941 yielded about 42,000 skins (159,687 in 1940). Pulpwood and pit props cut in the 1939-40 season totaled 690,000 cords; newsprint output in 1940 was about 350,000 tons. Mineral production for 1940 was (in long tons): Iron ore, 1,500,000, zinc concentrate, 116,000; copper concentrate, 42,000, lead concentrate, 46,000; fluorspar, 14,000. The 1935 census showed only 4,226 farmers. Crops were valued at \$3,444,000 in 1937.

Foreign Trade. For the year ended June 30, 1940, imports totaled \$28,421,897 and exports of Newfoundland products were \$32,827,323. Of the exports, wood pulp, newsprint, and other manufactures accounted for \$15,453,374; fishery products, \$8,099,581; mineral products, \$7,174,659; forestry products, \$1,630,761. The United Kingdom took exports to the value of \$10,901,707; United States, \$9,676,399; Canada, \$2,627,591.

Finance. For the fiscal year ended June 30, 1940, government receipts totaled \$16,928,563; expenditures, \$17,466,914. The public debt on June 30, 1940, was £19,996,241 and \$2,129,100. Also see **History** below.

Transportation. In 1940 there were 750 miles of government and 56 miles of private railway lines. A fleet of steamers maintained communication between the towns of the coast and the Canadian mainland. Highways extended 6,159 miles (1940). Large airfields are situated near Botwood (for seaplanes) and at Hattie's Camp, 30 miles further east (for landplanes). A total of 2,324 vessels of 120,416 tons were registered in Newfoundland Jan. 1, 1939. During 1938-39, the tonnage of vessels

entering and clearing the ports was 3,835,578.

Government. Newfoundland held until the end of 1933 the status of a self-governing dominion of the British Crown. By arrangement made in 1933 with Great Britain this status and, with it, parliamentary separate government were suspended. The British government undertook to deal with Newfoundland's financial difficulties—the immediate cause of the change; it appointed a governor, responsible to the British Secretary of Dominion Affairs, and under the governor, an advisory council of six. Half of these were selected from Great Britain, half from Newfoundland; each of them had particular charge of a governmental department. Governor and Commander-in-Chief, Vice Admiral Sir Humphrey Thomas Walwyn (appointed October, 1935).

HISTORY

U.S. Defense Bases. The Anglo-American agreement of Sept. 2, 1940, for the establishment of United States naval, air and military bases in Newfoundland (see *YEAR BOOK* for 1940, p. 547) was formalized in the treaty signed in London Mar. 27, 1941 (see *GREAT BRITAIN* under *History*). In accordance with the lease annexed to the treaty, the Newfoundland Government transferred six pieces of land to the United States for 99 years, as follows: (1) 2,610 acres of land on the Argientia Peninsula, lying between Little Placentia Harbor and Placentia Bay, for development as a landplane and seaplane base and as a military training ground; (2) 160 acres (in two separate plots) on and near the shore of Quidi Vidi Lake near St. John's for the garrisoning of American troops; (3) a section 700 by 1,400 feet on the crest of White Hills, (4) a 5,000-foot frontage on St. George's Bay on the west coast for development as a servicing field for army planes en route between the United States and the Argientia Peninsula air base; and (5) a section of the north shoreline of St. John's Harbor, for development as a U.S. naval station.

The United States agreed not to permit use of the leased areas except for defense purposes and to compensate private property owners for expropriation or damage. The vanguard of the American garrison arrived at St. John's Jan. 29, 1941, receiving a warm welcome from the inhabitants. Other units followed. On May 30 the new U.S. army base at Quidi Vidi Lake was named Fort Pepperrell after the American colonial soldier, Sir William Pepperrell. In May it was reported that 4,000 Newfoundlanders were being employed on the base projects, and this number was increased to 22,000 by December. The cost of the U.S. naval installations, including the seaplane base, was estimated at \$17,050,000. The Argientia naval station was commissioned July 15, 1941. Because of the island's strategic position, the naval and air bases came into extensive use during the year in connection with the U.S. convoy system and air patrol of the North Atlantic. President Roosevelt indicated on September 11 that a U.S. outpost had also been established in Labrador.

War Contribution. Meanwhile Newfoundland made other vital contributions to the Empire's war effort. Canadian naval and air patrols made increasing use of the British-controlled bases on the island. The landplane base at Hattie's Camp, with the world's largest landing field, dispatched hundreds of American-built bombers to Britain via the transatlantic ferry service operated jointly by the British and Canadian air forces.

In June, 1941, Newfoundland's direct contribution to the war was summarized by the *London Times* as follows: 2,000 enlisted men in the Royal

Navy; a "large number" serving in the R.A.F. air and ground crews; 130 men undergoing training in Canada under the Empire Air Training scheme; two regiments of heavy artillery, with most of the personnel serving in Great Britain; a small but efficient militia force in Newfoundland for home defense; and a large force of experienced loggers engaged in cutting timber in various parts of Great Britain. At the outbreak of the war, the Newfoundland Government dispensed with its annual grant-in-aid from the British Treasury through imposing new taxation and economies. In 1940, the island accepted responsibility for servicing Newfoundland debts guaranteed by the British Government.

Economic Conditions. Despite higher taxation, reduced government expenditures on non-defense projects, and the loss of additional export markets through the spread of the war, Newfoundland experienced marked economic improvement during 1940 and 1941. Beginning in 1940 the sale of fish at good prices was possible without government assistance for the first time since 1937. In May, 1941, market prices for fish were double the prewar level. Large-scale employment on United States and Canadian base facilities and the influx of funds from Newfoundlanders serving in Britain spurred local prosperity. Agriculture was stimulated by the requirements of the new U.S. bases and garrisons. On the other hand the cost of some staple articles of consumption increased 40 to 50 per cent between May, 1939, and May, 1941. The shortage of shipping forced a curtailment in the output of mmes.

In his annual budget speech, the Finance Commissioner announced that the financial year 1940-41 closed with a small surplus, the first in many years, and that revenue was the highest in the island's history. He budgeted for a surplus of over \$2,000,000 in 1941-42 even though cutting indirect taxation to lower the cost of living, raising grants for education and social services, and devoting a substantial sum for debt redemption. Out of the surpluses for 1940-41 and 1941-42, the government voted to spend \$500,000 on a squadron of R.A.F. fighter planes to be manned by Newfoundlanders, and to lend the balance to Great Britain free of interest for the duration of the war.

See *CANADA* under *History*; *CUSTOMS, BUREAU OF*.

NEW GUINEA, Territory of. See *AUSTRALIA* under *Area and Population*.

NEW HAMPSHIRE. A New England State. Area: 9,304 sq. m., including 280 sq. m. of inland water. Population: (1940 census) 491,524. The urban population comprises 57.6 per cent of the total (U.S. average, 56.5 per cent); non-white population, 0.1 per cent (U.S. average, 10.2); elderly (65 years and over), 9.7 per cent. New Hampshire ranks 43d among the States in area, 44th in population, and 22d in density, with an average of 54.5 persons per square mile. The capital is Concord with 27,171 inhabitants; largest city, Manchester, 77,685. There are 10 counties and nine cities of more than 10,000 inhabitants (see article on *POPULATION* in 1940 *YEAR BOOK*). For statistics on births, deaths, accidents, et cetera, see *VITAL STATISTICS*.

Education. According to James N. Pringle, Commissioner of Education, there were 74,199 pupils enrolled in the public schools of New Hampshire during the school year 1940-41, 52,436 in elementary schools and 21,763 in secondary schools. Teachers numbered 2,994. Men teachers in elementary schools received an annual average salary of \$1,386, those in secondary schools \$1,905; women

teachers in elementary schools \$1,107, secondary \$1,421. Total expenditures for the year were \$7,735,293.73.

Transportation. State highway mileage in 1939, including streets under State control, totaled 3,516, of which 3,513 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motor-cycles) numbered 136,109; 105,034 were private and commercial automobiles, 288 busses, and 30,062 trucks and tractor trucks. Gross motor-fuel consumption was 95,827,000 gal. Net motor-fuel tax receipts were \$3,617,000, the rate being four cents per gal. (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$3,052,000.

Railways of all classes totaled 1,003 miles (Dec. 31, 1939) .43 per cent of the total mileage in the United States. Class I steam railways accounted for 587 miles. There are 12 airports and landing fields in the State (three lighted fields) and six seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 81 civil aircraft in the State and 344 commercial and private pilots (297 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 390,600, as compared with 388,500 acres in 1940. According to the latest census, there are 16,554 farms, valued at \$62,206,391, averaging 109.3 acres each. Farm population numbered 71,266 or 14.5 per cent of the total. The leading crop was hay, worth \$6,001,000 and producing 360,000 tons.

Manufacturing. According to the 1939 Census of Manufactures, there were 806 manufacturing establishments in New Hampshire, employing 55,781 wage earners who received \$52,735,240 in wages for the year. The total value of products was \$237,396,015, value added by manufacture, \$105,187,809.

Mineral Production. Mineral products are of little importance in New Hampshire, their total value in 1939, according to the U.S. Bureau of Mines, being only \$1,187,339, chiefly stone and clay.

Trade. According to the 1940 census there were 363 wholesale establishments in New Hampshire, employing 2,534 persons, reporting net sales for 1939 of \$64,263,000 and annual pay roll of \$3,735,000. There were 7,435 retail stores with 18,149 employees, reporting sales of \$183,100,000 and pay roll of \$17,322,000. Service establishments numbered 2,204, employing 2,974 persons for \$2,418,000 per year, and reporting a business volume amounting to \$9,429,000. The leading business center of the State is Manchester which reported wholesale sales of \$24,367,000, retail sales of \$33,734,000, and \$2,610,000 receipts for its service establishments. Nashua reported sales of \$4,711,000 wholesale and \$14,483,000 retail; Concord, \$4,638,000 and \$13,646,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in New Hampshire was \$9,546,000. Under the Social Security program, financed by Federal funds matching State grants, 6,994 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$21.67 (U.S. average pension, \$21.08); 1,407 dependent children in 578 families received average monthly payments of \$45.58 per family (U.S. average, \$32.73); and 330 blind persons received \$22.91 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered an estimated 4,600 and received a total approximate payment of \$96,000.

The number of persons employed throughout the

State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 259 (\$17,000); NYA student work program, 860 (\$7,000); NYA out-of-school work program, 832 (\$17,000); WPA, 4,820 (\$299,000); other Federal emergency projects, 13 (\$2,000); regular Federal construction projects, 7,246 (\$1,237,000). The Farm Security Administration certified subsistence payments totaling \$2,000 for the month to 63 cases.

Legislation. The legislature, or General Court, convenes in regular session on the first Wednesday of January in odd years. It is composed of 24 Senators (9 Democrats and 15 Republicans in 1941) and 423 Representatives (194 Democrats and 229 Republicans). The following is a list of the more important laws passed at the 1941 session of the New Hampshire General Court, as compiled by Margaret Owen of the New Hampshire State Library staff.

Defense and the Present Emergency Providing for a state council of defense (Ch 45) Establishing a State guard (Ch 46). To protect against sabotage (Ch 47) Relating to explosives (Ch 48). Relative to reinstatement of state officials and employees who enter into the military or naval service of the United States for national defense in the present emergency (Ch 18). Relative to registration of motor vehicles by persons entering the military service of the United States for national defense—registration suspended and proportionate part of fee returned (Ch 53). To authorize banks and other institutions to act as agents for the sale of United States defense bonds (Ch 88). Relating to poll tax of soldiers and sailors, exempting all those in military service (Ch 127) Designating for improvement a new defense highway (Ch 186) Relating to housing—special authority for housing shortage in defense areas (Ch 213).

Uniform laws, and Compacts Uniform act on intra state fresh pursuit (Ch 34). Uniform simultaneous death act (Ch 55) Uniform warehouse receipts act (Ch 97) Interstate fisheries compact (Ch 135). Adjustment of certain inheritance taxes by compromise—double domicile act (Ch 139).

Miscellaneous Unfair sales act (Ch 92) Providing for alternate jurors (Ch 104). Providing for care and custody of female convicts (Ch 123) Providing for airport zoning (Ch 145). Authorizing the public service commission to establish temporary rates (Ch 148) Abolishing causes of action for breach of contract to marry (Ch 150) Creating a commission to study the election laws (Ch 146) Establishing a commission to study the problem of a retirement plan for state employees (Ch 165) Creating a retirement system for policemen (Ch 166). To provide for research on wood waste utilization—appropriation of \$2,500, contingent on equal contribution by industry, to be used at the University of New Hampshire (Ch 177) Making appropriations for capital improvements and long-term repairs for the state of New Hampshire (Ch 181) Relating to the development of aeronautics—establishing a state aeronautics commission (Ch 199). Authorizing the creation of housing authorities in cities (Ch 222).

Finances. Total tax collections in New Hampshire for the fiscal year ending in June, 1941, were \$15,957,000 (1940: \$15,844,000). Total sales taxes amounted to \$5,549,000, including motor fuel, \$3,923,000. Taxes on specific businesses ran to \$1,841,000, general and selective property, \$1,021,000, unemployment compensation, \$2,901,000. Cost payments for the operation of general government totaled \$14,800,000 in 1939, the latest year available. (Revenues for the general government for that year were \$19,754,000.) Cost of operation per capita was \$30.33. Total gross debt outstanding in 1941 was \$15,551,000, as compared with \$7,016,000 in 1932.

Officers and Judiciary. The Governor is Robert O. Blood (Rep.), inaugurated in January, 1941, for a two-year term; Secretary of State, Enoch D. Fuller; Attorney General, Frank R. Kenison; State Treasurer, F. Gordon Kimball; State Comptroller, Stephen B. Story. Chief Justice of the New Hampshire Supreme Court is John E. Allen; there are four associate members, appointed to serve to the age of seventy.

NEW HEBRIDES. A British-French condominium in the South Pacific, 250 miles northeast of New Caledonia. The main islands of the group are Ambrym, Aneityum, Aoba, Efate, Epi, Erromanga, Espiritu Santo, Gaua, Maewo, Malekula, Pentecost, and Vanua Lava. Area, 5,700 square miles; population (1939), 43,207. Capital, Vila (1,200 inhabitants). Chief products—copra, cacao, coffee, and vanilla. Trade (1939): £118,618 for imports and £123,921 for exports (copra £79,906, cacao £22,682, coffee £16,800). Finance (1939): £25,660 for revenue and £23,367 for expenditure. The government is under the joint administration of British and French officials. On Aug. 9, 1940, the French citizens of New Hebrides declared their allegiance to General de Gaulle's "Free French" movement.

NEW JERSEY. A middle Atlantic State. Area: 7,836 sq. mi., including 314 sq. mi. of inland water, but excluding parts of Delaware Bay, 315 sq. mi.; and New York Harbor, 69 sq. mi. Population: (1940 census) 4,160,165. The urban population comprises 81.6 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 5.5 per cent (U.S. average, 10.2); elderly (65 years and over), 6.7 per cent. New Jersey ranks 45th among the States in area, ninth in population, and second in density, with an average of 553.1 persons per square mile. The capital is Trenton with 124,697 inhabitants; largest city, Newark, 429,760. There are 21 counties and 57 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education, there were 746,383 pupils enrolled in the State School System of New Jersey during the school year 1937-38. Of this total, 544,093 were enrolled in kindergartens and elementary schools and 202,290 in secondary schools. The instructional staff comprised 28,096 persons, who received an annual average salary of \$2,006 (U.S. average: \$1,374), 4,846 or 18 1 per cent were men. Expenditures for all public schools in 1937-38 were \$96,897,241, making a total cost per capita of \$22.22 (U.S. average: \$17.15). There were 2,125 school buildings in the State, of which 176 were one-room, one-teacher schools. The value of public property used for school purposes was \$347,199,610. For higher education, see under *New Jersey* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 1,625, of which all was surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 1,101,213, 944,630 were private and commercial automobiles, 5,210 busses, and 137,126 trucks and tractor trucks. Gross motor-fuel consumption was 898,684,000 gallons. Net motor-fuel tax receipts were \$24,337,000, the rate being three cents per gal. (Dec. 31, 1940) State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$22,562,000.

Railways of all classes extended 2,123 miles (Dec. 31, 1939) .90 per cent of the total mileage in the United States. Class I steam railways (711 miles) reported 12,351,117 tons of revenue freight originating in New Jersey in 1940 and 42,039,152 tons terminating in New Jersey. There are 30 airports and landing fields in the State (seven lighted fields) and five seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 632 civil aircraft in the State and 1,962 airline transport, commercial, and private pilots (1,590 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 728,000, as compared with 723,000 acres in 1940. According to the latest census, there are 25,835 farms, valued at \$227,804,686, averaging 72.6 acres each. Farm population numbered 146,459 or 3.5 per cent of the total. Leading crops with production in 1941 were: Commercial truck crops, \$22,637,000; potatoes, \$6,734,000, 10,360,000 bu.; corn, \$6,085,000, 7,421,000 bu.

Manufacturing. The total value of manufactured products was \$3,428,947,188 according to the 1939 Census of Manufactures (For details, see 1940 YEAR BOOK.)

Mineral Production. Leading products are: Zinc, 91,406 short tons in 1940 (88,716 short tons valued at \$11,507,318 in 1939); clay products other than pottery and refractories, \$6,726,041 in 1939. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$30,271,293 or about seven-tenths per cent of the total for the United States.

Trade. According to the 1940 census there were 3,531 wholesale establishments in New Jersey, employing 36,609 persons, reporting net sales for 1939 of \$1,075,302,000 and annual pay roll of \$64,412,000. There were 68,851 retail stores with 153,673 employees, reporting sales of \$1,580,401,000 and pay roll of \$171,619,000. Service establishments numbered 22,864, employing 38,019 persons for \$40,081,000 per year, and reporting a business volume amounting to \$124,530,000. The leading business center of the State is Newark which reported wholesale sales of \$397,832,000, retail sales of \$249,372,000, and \$26,032,000 receipts for its service establishments. Jersey City reported sales of \$128,213,000 wholesale and \$96,257,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in New Jersey was \$85,554,000. Under the Social Security program, financed by Federal funds matching State grants, 31,174 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$21.37 (U.S. average pension, \$21.08); 23,833 dependent children in 10,486 families received average monthly payments of \$31.60 per family (U.S. average, \$32.73); and 739 blind persons received \$23.72 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 26,539 and received \$21.93 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 2,337 (\$155,000); NYA student work program, 9,834 (\$67,000); NYA out-of-school work program, 11,201 (\$248,000); WPA, 42,471 (\$2,646,000); other Federal emergency projects, 46 (\$3,000); regular Federal construction projects, 38,016 (\$5,997,000). The Farm Security Administration certified subsistence payments totaling \$3,000 for the month to 85 cases.

Legislation. The Legislature convenes in regular session on the second Tuesday of January annually. It is composed of 21 Senators (5 Democrats and 16 Republicans in 1941) and 60 Representatives (19 Democrats and 41 Republicans).

The following measures enacted by the Republican-controlled 1941 Legislature were cited by State Republican leaders as constituting its major achievements: (1) Twenty-one measures to strengthen New Jersey's military and industrial defenses and to bring about the maximum cooper-

ation between State and local officials in connection with the national defense program. (2) More than a score of measures to strengthen municipal finances, continuing a policy of reducing local taxes and setting up State supervision of municipal finance. (3) Seven laws aimed at solving the State's long-standing relief problem. (4) A measure prohibiting the practice of law in any of the courts of the State by appointed judges of the Court of Errors and Appeals and by Advisory Masters in the Court of Chancery. (5) A measure giving the Governor the right to investigate State agencies. (6) Measures to aid labor, including an anti-injunction act and a five-member Mediation Board bill. (7) Regulation of industrial home work (aimed at sweat shop abuses). (8) Eleven laws correcting weaknesses in the State election system, designed to provide uniform practices and reduce the cost of administration. (9) Permanent registration, effective July, 1943. (10) New laws dealing with the public schools, including steps to guarantee the soundness of the teachers' pension and annuity fund, expansion of vocational education, and provision for tuberculosis examinations among children. (11) Highway safety measures. (12) Public health measures, including provision for a rural mobile dental demonstration unit and measures to improve conditions in public institutions. (13) A law prohibiting discrimination under the civil rights act on the basis of sex or marital status. (14) The railroad tax compromise bills, passed in an all-night session, which constituted a victory for the Governor over Mayor Hague of Jersey City.

The Legislature adhered strictly to its policy of "no new taxes," avoiding sales, income, business, and nuisance taxes in the continued effort to attract business to the State. Other laws passed were designed to regulate the liquor industry, safeguard banks and other financial institutions, and improve farm markets. See CHILDREN'S BUREAU.

Finances. Total tax collections in New Jersey for the fiscal year ending in June, 1941, were \$163,384,000 (1940: \$153,838,000). Total sales taxes amounted to \$34,318,000, including motor fuel, \$24,702,000, alcoholic beverage, \$9,616,000. Taxes on specific businesses ran to \$23,067,000, general and selective property, \$24,761,000, unemployment compensation, \$52,554,000. Cost payments for the operation of general government totaled \$8,074,000 in 1939, the latest year available. (Revenues for the general government for that year were \$155,145,000.) Cost of operation per capita was \$21.26. Total gross debt outstanding in 1941 was \$117,071,000, as compared with \$141,230,000 in 1932.

Officers and Judiciary. The Governor is Charles Edison (Dem.), inaugurated in January, 1941, for a three-year term; Secretary of State, Thomas A. Mathis; Attorney General, David T. Wilentz; State Treasurer, William H. Albright; State Auditor, Frank Durand; State Comptroller, Frank Murray. Chief Justice of the New Jersey Supreme Court is Thomas J. Brogan; there are eight associate members appointed for seven-year terms.

NEW MEXICO. A mountain State. Area: 121,666 sq. m., including 155 sq. m. of inland water. Population: (1940 census) 531,818. The urban population comprises 33.2 per cent of the total (U.S. average, 56.5 per cent); non-white population, 7.5 per cent (U.S. average, 10.2); elderly (65 years and over), 4.3 per cent. New Mexico ranks fourth among the States in area, 41st in population, and 45th in density, with an average of 4.4 persons per square mile.

The capital is Santa Fe with 20,325 inhabitants; largest city, Albuquerque, 35,449. There are 31 countries and five cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education conducted by the U.S. Office of Education, there were 129,877 pupils enrolled in the State School System of New Mexico during the school year 1937-38. The instructional staff comprised 4,153 persons, who received an annual average salary of \$1,090 (U.S. average: \$1,374); 786 or 21.2 per cent were men. There were 58 supervisors, 386 principals, 2,982 elementary teachers, and 727 regular and vocational high school teachers. Expenditures for all public schools in 1937-38 were \$8,774,412, making a total cost per capita of \$20.79 (U.S. average: \$17.15). For higher education, see under *New Mexico* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 12,269, of which 5,423 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 128,159; 94,534 were private and commercial automobiles, 1,261 busses, and 29,261 trucks and tractor trucks. Gross motor-fuel consumption was 110,917,000 gal. Net motor-fuel tax receipts were \$4,699,000, the rate being five cents per gal. (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$1,994,000.

Railways of all classes extended 2,844 miles (Dec. 31, 1939), 1.21 per cent of the total mileage in the United States. Class I steam railways (1,898 miles) reported 1,768,848 tons of revenue freight originating in New Mexico in 1940 and 1,332,214 tons terminating in New Mexico. There are 39 airports and landing fields in the State (17 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 122 civil aircraft in the State and 529 airline transport, commercial, and private pilots (479 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 1,548,300, as compared with 1,514,400 acres in 1940. According to the latest census, there are 34,105 farms, valued at \$187,525,814, averaging 1,139.4 acres each. Farm population numbered 178,692 or 33.6 per cent of the total. The leading crop was cotton lint, worth \$9,430,000 and producing 115,000 bales.

Manufacturing. According to the 1939 Census of Manufactures, there were 272 manufacturing establishments in New Mexico, employing 3,250 wage earners who received \$2,912,993 in wages for the year. The total value of products was \$25,123,641; value added by manufacture, \$8,711,764.

Mineral Production. Leading products are: Petroleum, 39,001,000 bbl. in 1940 (37,637,000 bbl. valued at \$30,850,000 in 1939); copper, 139,696,000 lb. valued at \$15,785,648 in 1940 (92,284,000 lb., \$9,597,536, in 1939); natural gas, 60,284,000 M cubic feet valued at \$8,788,000 in 1939. Preliminary figures for 1941 indicated that copper production increased by 3,428,000 lb. to a total of 143,124,000 (\$16,745,508); zinc assumed greater importance, increasing from 60,626,000 lb. (\$3,819,438) in 1940 to 75,691,000 lb. (\$5,752,516) in 1941. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$69,921,765 or 1.65 per cent of the total for the United States. New Mexico ranks 16th among the States in value of mineral production.

Trade. According to the 1940 census there were

542 wholesale establishments in New Mexico, employing 2,463 persons, reporting net sales for 1939 of \$66,387,000 and annual pay roll of \$3,197,000. There were 6,617 retail stores with 12,846 employees, reporting sales of \$125,765,000 and pay roll of \$11,596,000. Service establishments numbered 1,612, employing 2,202 persons for \$1,714,000 per year, and reporting a business volume amounting to \$6,352,000. The leading business center of the State is Albuquerque which reported wholesale sales of \$18,992,000 and retail sales of \$23,332,000.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in New Mexico was \$12,642,000. Under the Social Security program, financed by Federal funds matching State grants, 4,750 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$17.25 (U.S. average pension, \$21.08); 5,710 dependent children in 2,011 families received average monthly payments of \$26.28 per family (U.S. average, \$32.73); and 218 blind persons received \$18.66 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 1,759 and received \$7.06 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 3,241 (\$215,000); NYA student work program, 2,022 (\$14,000); NYA out-of-school work program, 1,583 (\$32,000); WPA, 10,066 (\$619,000), other Federal emergency projects, 392 (\$47,000), regular Federal construction projects, 4,705 (\$516,000). The Farm Security Administration certified subsistence payments totaling \$10,000 for the month to 221 cases.

Legislation. The Legislature convenes in regular session on the second Tuesday of January in odd years. It is composed of 24 Senators (21 Democrats and 3 Republicans in 1941) and 49 Representatives (40 Democrats and 9 Republicans).

New Mexico's fifteenth State Legislature convened January 14, 1941, and adjourned Apr. 12, 1941, this being the first Legislature to meet under provisions of a constitutional amendment providing for division of regular sessions into two thirty-day terms with a thirty-day interim. Out of 620 measures introduced 250 were enacted into law including the following, as summarized by Arie Poldervaart, State Librarian: an act establishing a Public Service Commission to regulate public utilities, a basic sciences act regulating all healing arts practiced within the State, an act authorizing construction of a capital annex (later invalidated by the Supreme Court), an act rearranging judicial districts of the State and providing for one additional district judge, an act creating a regulatory State dry cleaning board, an act authorizing group insurance for State employees, a new teachers' retirement act, acts abolishing the State's Merit System Commission and Legislative Reference Bureau, and numerous measures aiding national defense. Several constitutional amendments were proposed for submission to the electorate at the next general election, including one to re-divide regular sessions of the Legislature into terms of 20 days and 40 days respectively, and another designed to prevent legislators from holding other public office while serving as members of the Legislature, but increasing their rate of compensation as lawmakers.

Finances. Total tax collections in New Mexico for the fiscal year ending in June, 1941, were \$18,519,000 (1940: \$17,578,000). Total sales taxes amounted to \$10,403,000, including motor fuel, \$5,435,000, general sales, \$4,265,000. Taxes on specific

businesses ran to \$718,000, general and selective property, \$2,262,000, unemployment compensation, \$1,426,000. The net income taxes were \$577,000.

Cost payments for the operation of general government totaled \$15,330,000 in 1939, the latest year available. (Revenues for the general government for that year were \$24,306,000.) Cost of operation per capita was \$29.59. Total gross debt outstanding in 1941 was \$26,747,000, as compared with \$12,232,000 in 1932.

Officers and Judiciary. The Governor is John E. Miles (Dem.), inaugurated in January, 1941, for his second two-year term; Lieutenant Governor, Ceferino Quintana; Secretary of State, Jessie M. Gonzales; Attorney General, Edward P. Chase; State Treasurer, Rex French; State Auditor, E. D. Trujillo; State Comptroller, C. R. Sebastian. Chief Justice of the New Mexico Supreme Court is Howard L. Bickley; there are four associate members elected by popular vote for eight-year terms. See FLOODS.

NEW ORLEANS. See PORTS AND HARBORS; WATER WORKS.

NEW SOUTH WALES. See AUSTRALIA under *Area and Population*.

NEWSPAPERS AND MAGAZINES. Newspapers in the United States in 1941 continued the long time trend of recent years toward a smaller number of journals as steadily rising costs were accompanied by the prospect of reduced advertising volume. The full calendar year's figures of advertising lineage indicated a small margin over the total of 1941 but the consequences of the United States entrance into the war, and the effects of this action upon advertised consumer goods were being felt more and more in the last two months. Shortages and enforced priorities in various materials—zinc, for example—were beginning to give concern. Newspapers received a rating of A-10 in supplies not actually entering into the finished product itself—that is, upon supplies except paper and ink. Although there was no increase in the price of newspaper in the year, a rise of \$3 a ton, to \$53, for the second quarter of 1942 was announced. The \$50 a ton price had been in effect for more than four years. General operating costs were estimated to be from 2 to 12 per cent higher despite economies. A moderate number of newspapers, chiefly in cities of medium to small population, advanced their weekly subscription rates in an effort to add to revenue. Circulation of newspapers rose to a new all time peak, but few compensating increases were made in advertising rates.

In the news departments the impact of the nation's going to war threw added burdens upon the staffs, and editors and reporters who heretofore had felt the restrictions only of foreign censorship now inevitably were made subject to censorship in the United States. The year also was marked by several strikes in news and editorial departments.

The year ended with newspaper publishing not yet gravely affected by the war; but the swift changes which had come over other industries in this new total war effort left few in doubt that considerable readjustments were in prospect. The supply of newsprint had not yet been diminished, but fears were expressed that mills might be required to turn over part of their pulp production to meet shortages in other paper products. Publishers were warned to make every economy. Some newspapers in the far Northwest had difficulty with deliveries of newsprint owing to the scarcity of shipping, and it was believed by many that priorities might be

established on railroad freight shipments which would be felt on such bulk commodities as newsprint.

Cranston Williams, General Manager of the American Newspaper Publishers Association, warned publishers that "frills" faced curtailment, and that while essential supplies of newsprint, type-metal, and ink, were still available, color printing and photo-engraving materials probably would fall below requirements. The smaller publisher, it was agreed, would feel the effects of priorities, shortages, high taxes, and other problems with especial severity.

The total number of daily newspapers in the English language in the United States was 21 fewer than in the previous year. The annual compilation of *Editor and Publisher* showed these comparisons over a five-year period:

Year	Total	Morning	Evening	Sunday
1941	1,857	377	1,480	510
1940	1,878	380	1,498	525
1939	1,888	383	1,505	524
1938	1,936	398	1,538	523
1937	1,993	416	1,577	539

In Canada, the number of morning newspapers remained the same, 17; evening newspapers, with 77, showed a loss of one, and Sunday newspapers, with four, a loss of one.

The combined weekday circulation of all morning and evening newspapers, according to *Editor and Publisher*, was 42,080,391, of which 16,519,010 was of morning editions, and 25,561,381 of evening. The Sunday newspapers had a combined circulation of 33,435,575. The combined weekday circulation showed a gain of 948,780 and the Sunday of 1,064,483 over the 1940 total.

The compilation of daily newspapers in the N. W. Ayer & Son's annual *Directory* listed 1,974 in 1941, or 24 fewer than in the previous year. The discrepancy between these figures and those quoted above lies in the fact that the Ayer totals include college newspapers and a number of commercial newspapers. The number of newspapers of all kinds, including weeklies, was put at 13,204, a loss of 177 in the year.

Advertising volume in newspapers increased 3.5 per cent over 1940, based upon a measurement of all daily journals in 52 cities. The increase in December, however, was only 2.2 per cent, indicating a downward trend. All major classifications of advertising registered gains except automotive, but the pattern of advertising volume was by no means the same in all markets. Some communities in which large defense expenditures were made showed exceptional increases in retail and classified.

A year end survey by *Editor and Publisher* of a representative cross section of daily newspapers (103 morning, 146 evening, 142 Sunday) showed record breaking high circulations, gaining 2 per cent over 1940. The Sunday newspapers reported an increase of 4.29 per cent, morning 2.79 per cent and evening 1.26 per cent.

A survey of trends in newspaper publishing was issued by the Newsprint Association of Canada; some 70 per cent of the dominion's output is sold to the United States. Publishing costs, it was found, had steadily been rising "in the predominant item of personnel" and there had been a tendency toward rigidity of costs which aggravated the problem of diminishing revenues. The survey found a continuation of unfavorable trends noted in a previous survey in 1938, chiefly due to a decline in advertising revenues. The main causes attributed were a long time downward movement of total expenditures for advertising in the United States, and

an increasing diversion to other media, principally radio. The survey looked to a contraction of the activities of the press.

The newspaper press naturally was preoccupied with the task of covering the war and the enormous efforts of the United States to build its fighting force. The War Department issued a list of 115 accredited correspondents, as the newspapers laid plans to report the news of a conflict likely to be fought overseas in distant lands and presenting great difficulties in transmission of stories.

Problems of covering news in Europe and elsewhere abroad were increased greatly. Arrests and expulsions of correspondents were frequent. Italy compelled John T. Whitaker of the *Chicago Daily News* to leave that country, because the general tone of his dispatches was displeasing. The same newspaper recalled its Berlin correspondent because of the impossibility of sending "independent, analytical dispatches." Jay Allen, of the North American Newspaper Alliance was imprisoned by the Nazis in occupied France; Richard Hottelet of the United Press also was seized. Both Mr. Allen and Mr. Hottelet were later exchanged for three Germans under arrest in the United States for failing to register as alien propagandists. The outbreak of war between the United States and the Axis nations naturally compelled a complete revision of personnel in enemy or enemy controlled countries. Switzerland became an increasingly important central news post from which to cover European news. Stockholm also was important, but German pressure continually was applied to newspapers and correspondents in that country.

In a war of such swift movement, and in which the bombings from the air were so widespread, many correspondents were often in great personal danger. In Libya two correspondents, Harold Denny of *The New York Times* and Godfrey Anderson of the Associated Press, accredited to the British Army, were captured by the German and Italian forces. In Russia, after the Germans had begun their retreat, correspondents were permitted to go close to the combat lines to observe the results of the fighting. Probably the most spectacular personal exploits were those of correspondents on naval ships in action. Larry Allen, of the Associated Press, was on the British cruiser, *Galatea*, sunk in the Mediterranean, and was rescued from the water after nearly one hour. Other correspondents on ships went through lively bombing attacks; Mr. Denny flew in a British bomber over Tripoli and described the sharp anti-aircraft fire of the defenders.

Censorship and various controls of news in the United States were more strongly felt as the war developed. Under the operation of the lend-lease act the newspapers were asked by the government not to print news of the arrival or departure of any British warship entering port for supplies or repairs. This request generally was observed, but led to some confusion; news of the arrival of one British battleship in New York, for repairs, observed by thousands of persons, was printed by two of the local newspapers and omitted by others.

When the United States entered the war, censorship naturally was promptly established. Shipping and mails reports, and all weather forecasts except local, were eliminated. President Roosevelt appointed Byron Price, executive editor of the Associated Press as director of the Office of Censorship (q.v.), responsible directly to the President. The administration announced that the plan differed from the Committee of Public Information in the first World War; at that time all governmental in-

formation was handled by the Committee, except Army and Navy communiques. Mr. Price was instructed to approve releases arising from the usual sources, instead of preparing and issuing them. In general the effort was to decentralize censorship and afforded news reporters a greater measure of freedom. The control was to be partly mandatory, partly voluntary. President Roosevelt had asked the newspapers soon after the war not to endeavor to compile long casualty lists, which might give information to the enemy, but to confine publication to stories of local persons killed or wounded.

An interesting incident of the outbreak of hostilities was the arrangement for the exchange of American newspapermen in Axis countries for correspondents of those nations in the United States. Because it had been apparent for some time that war was likely, the matter had been the subject of discussion with the State Department beginning in February, 1941. The actual exchange had not been completed by the year end, but it was confidently expected that the 30 United States newspapermen in Axis nations would be allowed to leave with the diplomatic staffs.

There was a noticeable diminution in criticism of newspapers as compared with 1940 when President Roosevelt's victory in spite of the opposition of a large majority of the daily press had been the occasion for outspoken attacks. Newspapers, it had been said, represented the point of view of vested interests rather than of the people. The President's domestic policies continued to be criticized by most newspapers. Although the press had been divided upon the question of the administration's foreign policies, the Japanese attack upon Pearl Harbor ended all argument on the question of war.

A general tendency to charge the government with antagonism toward newspapers and with efforts to seize control of advertising was noted. The American Newspaper Publishers Association in a special bulletin listed a number of attacks by government bureaus upon the accuracy, truthfulness, and the economic value of advertising.

The Federal Communications Commission conducted an inquiry into radio stations wholly or partly owned by newspapers. The Commission listed 249 stations (somewhat less than one third of the total) as "newspaper owned or controlled." No definite findings had been issued as the year ended, but the annual report of the Commission said that the facts developed at the hearings might lead to a "general determination of . . . policy or of new legislation."

In their efforts to meet the problem of increasing costs, partly imposed by the Wage-hour Law, a number of newspapers, chiefly in medium-sized cities, eliminated generally unprofitable Saturday or Monday editions, and substituted Sunday editions. More than 300 of the 1,850 daily newspapers in the United States have no Saturday or Monday editions. As against this trend, such newspapers as the Charlotte, N.C. *News* and New Orleans *Item* dropped their Sunday editions. In several cities newspapers adopted joint publishing operations; in all instances mechanical operations were combined, but varying patterns were arranged with respect to business, advertising, and circulation departments. Some cities thus affected were Topeka, Kansas (the *Capital and State Journal*), Tulsa, Oklahoma (the *World and Tribune*); Sioux City, Iowa, (the *Journal and Tribune*); in this instance an evening paper was discontinued). In other cities mergers were consummated; in Minneapolis the two Sunday newspapers were combined, while the three dailies were continued, with joint plant operation of two;

in Lowell, Massachusetts, four newspapers became two, with the publishers of the *Sun* in control of both morning and evening journals; and in Sandusky, Ohio, two newspapers came under a single ownership as one paper was suspended. The most notable death in the ranks of daily newspapers was that of the *Boston Transcript*, after 111 years of publication. The Bridgeport, Conn., *Times Star* suspended after a career of 151 years. The Kansas City *Journal* was sold by the Doherty estate to Washington and Kansas City interests headed by Harry Newman; and the New Orleans *Item* was sold by James M. Thompson to Ralph Nicholson.

The most important addition to the ranks of daily journalism in the year was the Chicago *Sun*. Marshall Field, who was financing the evening tabloid, *P.M.*, in New York, entered the Chicago newspaper lists on December 4 with this rival to the powerful *Tribune*, sole survivor of a long list of morning newspapers in that city. Mr. Field's associate, as publisher, was Silliman Evans, publisher of the Nashville, Tenn., *Tennessean*. Incidentally, *P.M.* (a newspaper selling at 5 cents a copy and accepting no advertising) was declared by its publisher, Ralph Ingersoll, to be losing approximately \$22,000 a week, on a circulation of some 100,000; he said that the newspaper could break even on a circulation of 200,000. The eventual success or failure of this experiment in journalism was still in doubt as the year ended.

The trend toward dropping rotogravure picture sections was hastened when newspapers such as the *Washington Post*, *Dallas News* and *Omaha World Herald* announced that they would take this step. In December *The New York Times*, the first newspaper in the United States to issue a rotogravure picture section (in 1914), announced that it would discontinue this feature, consolidating it with the tabloid-size Magazine Section. For years advertising in newspaper rotogravure sections had been declining. Improvement in quality of printing of pictures in weekday editions, on ordinary newsprint, and the increase in use of such pictures, had left rotogravure reproduction relatively less to offer the reader. A new syndicated supplement in rotogravure, however, was launched in the year by the publishers of *P.M.*, in New York, and had been added as a Sunday section by several newspapers.

Important changes were made in a number of well known news agencies. Reuter's, foremost news distributing agency of the British Empire, came under the joint ownership of the Press Association, a company financed and controlled by the provincial newspapers of Great Britain, and the Newspaper Proprietors Association, representing the larger London journals. A proposal to nationalize the agency had wisely been rejected by the government, on the ground that such a step would destroy the news value of its reports. Havas, the French agency, was taken over by the Vichy Government in January, and became the "French Office of Information." Allegations were made that in South America this Vichy agency was not unfriendly to Axis interests.

The Associated Press in the United States branched out even more widely than before in the direction of supplying special news and features. In August it purchased the photographic service, "Wide World," from *The New York Times*, and in December the special news service was transferred to "Wide World" so that a greater amount of illustrated features could be supplied to members.

The Associated Press reported that it was now serving, directly or through its subsidiaries, 2,012 newspapers throughout the world, of which 1,264

were in the continental United States. The Associated Press spent \$11,179,535 on its news and supplemental services in 1940, of which \$2,453,155 was for domestic newsgathering and \$1,047,383 for foreign news, \$4,718,679 for distribution and communications, and \$4,200,455 for supplemental services. Robert McLean was reelected president of the Associated Press. Walter Dear, General Manager of the Jersey City *Journal*, was chosen president of the American Newspaper Publishers Association.

Three court decisions were rendered involving the issue of the freedom of the press. The Supreme Court in the case of the Los Angeles *Times* established the right of a newspaper to comment upon a case pending in the courts; in setting aside convictions in the lower courts, Justice Black said that they "produced restrictive results" and a censorship at the time when public interest in the matter discussed would be at its height. A minority, however, in a dissenting opinion read by Justice Frankfurter (joined by Chief Justice Stone, Justices Roberts and Byrnes) found it dangerous to permit a powerful metropolitan newspaper "to attempt to overawe a judge in a matter immediately pending before him" The St. Louis *Post Dispatch* was upheld by the Missouri Supreme Court in the right to criticize court decisions. The Mississippi Supreme Court also reversed an editor's conviction for contempt arising out of criticism of the courts. A case involving the right of the Wage and Hour division of the government to inspect the books of Easton, Pa., newspapers was won by the newspapers on a technicality, but the judge dismissed the freedom of the press argument raised by the defendants.

The Newspaper Guild reported at the end of the year that it now had contracts with approximately 160 newspapers. The most significant change in the Guild itself was the decision at the annual meeting in Detroit to elect the national officers by a nationwide referendum instead of by a vote at convention. In the subsequent referendum the ticket which had been put in the field by a group opposing the national officers was elected by large majorities. Milton Murray of Detroit was chosen president, and Sam Eubanks, of Oakland, California, vice president. Among the elections in newspaper offices won by the Guild in 1941 was that in *The New York Times*. Several strikes were called during the year; in one of them the newspaper, the Birmingham, Ala., *Post*, suspended publication for more than three months.

Foreign Papers. In the foreign field newspapers fell increasingly under government controls. The British press, operating under a war time censorship with respect to military news, continued to have the utmost freedom in criticizing the government and its policies. Facing a shortage of news print, the newspapers at the request of the government made a substantial reduction in size, and limited the number of copies printed. Newsprint had been pooled voluntarily by the newspapers and distributed so that all journals would have a supply in proportion to their shares of the total before the war. The London *Times* raised its single copy price from twopence to threepence; the management said that the cost of the paper was three times the price received from distributing agents. Advertising in most British newspapers was reduced to approximately one-half that of 1940, but this space was readily sold; many journals announced in the autumn that they were completely booked up for the first quarter of 1942.

The dictator-controlled countries continued to

hold the press in subjugation in their own and in occupied nations. In the Netherlands only 130 of a former total of 650 news periodicals were in existence. The strictest rules concerning what could and could not be printed were issued to the Dutch newspapers by the German authorities. The newspapers in occupied France were almost entirely servile. In unoccupied France the newspapers occasionally showed some measure of independence, and official censorship was lifted slightly in March. By government order, however, the price was increased to one franc a copy and this reduced circulation.

The wartime Prices and Trade Board in Canada "froze" the subscription prices of newspapers in the Dominion. New Zealand newspapers, only 50 per cent of the size of pre-war issues, were further curtailed. Brazil forbade publication of newspapers or magazines in any language except Portuguese; 17 German, 14 Italian, and 9 Japanese newspapers, as well as a large number in the English language were forced to suspend. Ecuador granted full censorship of the press to the president, and a pro-Nazi newspaper was first to be forbidden.

Japan ordered a drastic reorganization of the nation's newspapers in September as "public utilities charged with a national mission." Publication was to be only by license, and special qualifications were to be required in the selection of executives.

A notable change in the journalistic world was the retirement of Geoffrey Dawson from the editorship of the London *Times* after twenty-five years of service. He was succeeded by R. M. Barrington-Ward.

Magazines. Magazines reached higher circulations in 1941—twenty-one national magazines showed an average gain of 5.5 per cent over 1940—and it seemed likely that the increases in subscription prices initiated by some as the year ended in an effort to meet rising costs of production would be extended. The *Ladies Home Journal* established a single copy price of 15 cents, instead of 10, and an annual subscription rate of \$1.50, instead of \$1. The *Saturday Evening Post* also raised its prices to readers, and both increased advertising rates. Several publishers announced that advertising contract rates would be guaranteed only for three months, in place of the customary annual contracts.

Readers Digest, with a circulation of 5,000,000 copies (in addition to 200,000 of its English edition, and 380,000 for its Spanish language edition) again reached a new all-time high for any publication. *Colliers*, at 2,909,794, and the *Ladies Home Journal* at 4,100,000 for the second six months of the year, reported new peaks.

The N. W. Ayer & Son's compilation of magazine publishing statistics showed a total of 6,709 periodicals in 1941, a gain of 241 over the previous year, chiefly in the weekly field. Advertising in the group classed as "general" showed a slight loss, and in the women's group a gain of 4.1 per cent.

Advertising in magazines showed only a 1 per cent gain over 1940, the natural consequence of the dislocation of consumer goods production, and the hesitation of advertisers to promote merchandise which might not be available to purchasers. Difficulties in obtaining certain colors in inks were feared by printing experts, and the shortage of chlorine was expected to change the paper color from white to darker shades.

A number of new magazines devoted to international affairs commenced publication. A monthly, *The Free World*, inaugurated to promote discussion of "World affairs and democracy" enlisted the

aid of a distinguished group of intellectual leaders of many countries. Belgian patriots in exile in the United States undertook the publication of a periodical, *Belgium, The Cultural Review*, and *The Bridge*, edited for child refugees in the United States; *Christianity and Crisis*, *The Far Eastern Quarterly*, *Salute*, published by the British War Relief Society, also were new. The Parents Magazine Press added *Calling All Girls* to its list. *Punch*, the British weekly, celebrated its 100th anniversary. See CENSORSHIP, OFFICE OF; COORDINATOR OF INTER-AMERICAN AFFAIRS; FACTS AND FIGURES, OFFICE OF; FRENCH LITERATURE; GERMAN LITERATURE; ITALIAN LITERATURE; PULITZER PRIZES. CHARLES MCD. PUCKETTE.

NEW YORK. A middle Atlantic State. Area: 49,576 sq. mi., including 1,647 sq. mi. of inland water, but excluding parts of Lake Erie, 594 sq. mi.; Lake Ontario, 3,033 sq. mi.; Long Island Sound, 726 sq. mi.; and New York Harbor, 23 sq. mi. Population: (1940 census) 13,479,142. The urban population comprises 82.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 4.5 per cent (U.S. average, 10.2); elderly (65 years and over), 6.8 per cent. New York ranks 29th among the States in area, first in population, and fifth in density, with an average of 281.2 persons per square mile. The capital is Albany with 130,577 inhabitants; largest city, New York, 7,454,995. There are 62 counties and 70 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Ernest E. Cole, Commissioner of Education, there were 2,255,508 pupils enrolled in the public schools of New York during the school year 1939-40, 1,469,913 in elementary schools and 705,042 in secondary schools. Teachers numbered 80,553 and received (exclusive of New York City) an annual average salary of \$1,850. Total expenditures for the year were \$357,637,229.

Transportation. State highway mileage in 1939, including streets under State control, totaled 14,011, of which 12,719 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 2,778,312; 2,399,496 were private and commercial automobiles, 7,757 busses, and 335,761 trucks and tractor trucks. Gross motor-fuel consumption was 1,970,555,000 gallons. Net motor-fuel tax receipts were \$73,116,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$55,944,000.

Railways of all classes extended 7,786 miles (Dec. 31, 1939), 3.31 per cent of the total mileage in the United States. Class I steam railways (4,422 miles) reported 29,669,232 tons of revenue freight originating in New York in 1940 and 67,865,727 tons terminating in New York. There are 94 airports and landing fields in the State (23 lighted fields) and 51 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 1,624 civil aircraft in the State and 5,765 airline transport, commercial, and private pilots (4,400 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 6,527,200, as compared with 6,491,200 acres in 1940. According to the latest census, there are 153,238 farms, valued at \$947,073,893, averaging 112.1 acres each. Farm population numbered 703,606 or 5.2 per cent of the total. Leading crops with production in 1941 were: Hay, \$59,475,000, 4,230,000 tons; commercial truck

crops, \$28,481,000; corn \$24,066,000, 27,040,000 bu.; potatoes, \$22,971,000, 27,676,000 bu.; apples, \$14,508,000, 16,120,000 bu.; oats, \$13,082,000, 25,650,000 bu.; dry beans, \$8,004,000, 1,453,000 bags, wheat, \$6,106,000, 6,642,000 bu.

Manufacturing. The total value of manufactured products, according to the latest census (for the year 1939) was \$7,134,400,147. For details, see 1940 YEAR BOOK.

Mineral Production. Leading products are: Pig iron, 3,206,162 net tons valued at \$54,150,107 in 1940 (2,475,450 net tons, \$45,275,716 in 1939); coke, 5,080,403 net tons in 1940 (4,468,437 net tons valued at \$25,526,646 in 1939); ferro-alloys, 163,308 long tons valued at \$18,388,766 in 1939; natural gas, 29,222,000 M cubic feet valued at \$15,201,000 in 1939, petroleum, 4,999,000 bbl. in 1940 (5,098,000 bbl. valued at \$10,650,000 in 1939); stone, 9,782,120 short tons valued at \$10,398,401 (10,703,690 short tons, \$10,111,032); cement, 8,251,038 bbl., \$11,687,089 (6,853,796 bbl., \$9,866,102); sand and gravel, 13,225,133 short tons, \$7,639,668 (12,608,128 short tons, \$7,050,104); salt, 2,117,671 short tons, \$6,523,775 (2,041,492 short tons, \$5,855,422). Clay products (other than pottery and refractories) were valued at \$6,883,109 in 1939. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was \$78,383,851. (Duplications are eliminated in State totals, e.g. coke, ferro-alloys, and pig iron are omitted whereas iron ore is included.) New York ranks 14th among mineral producing States with 1.85 per cent of the Nation's total value of production.

Trade. According to the 1940 census there were 30,389 wholesale establishments in New York, employing 292,807 persons, reporting net sales for 1939 of \$14,508,479,000 and annual pay roll of \$632,525,000. There were 209,425 retail stores with 567,150 employees, reporting sales of \$5,578,159,000 and pay roll of \$660,093,000. Service establishments numbered 92,900, employing 177,285 persons for \$225,816,000 per year, and reporting a business volume amounting to \$665,540,000. The leading business center of the State is New York which reported wholesale sales of \$12,954,252,000, retail sales of \$3,192,594,000, and \$518,130,000 receipts for its service establishments. Buffalo reported sales of \$450,270,000 wholesale and \$250,311,000 retail; Rochester, \$78,227,000 and \$169,967,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in New York was \$319,172,000. Under the Social Security program, financed by Federal funds matching State grants, 121,496 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$24.72 (U.S. average pension, \$21.08); 65,242 dependent children in 33,203 families received average monthly payments of \$46.04 per family (U.S. average, \$32.73); and 2,845 blind persons received \$25.72 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 199,949 and received \$36.21 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 7,965 (\$528,000); NYA student work program, 42,701 (\$306,000); NYA out-of-school work program, 30,754 (\$780,000); WPA, 101,919 (\$7,144,000); other Federal emergency projects, 882 (\$153,000); regular Federal construction projects, 30,901 (\$4,598,-

000). The Farm Security Administration certified subsistence payments totaling \$7,000 for the month to 218 cases.

Legislation. The Legislature convenes in regular session on Wednesday after the first Monday of January annually. It is composed of 51 Senators (21 Democrats and 30 Republicans in 1941) and 150 Representatives (62 Democrats, 87 Republicans, and one American Laborite).

The 1941 session of the Legislature adjourned April 4 after passing 1,333 bills, 955 of which were signed and became law. The following summary of "Highlights of the Session" appeared in the *New York Times* of April 4, 1941, and is reprinted with special permission.

General Adoption for the second time, for submission to the people in the Fall, of the Stephens constitutional amendment transferring \$60,000,000 of grade-crossing elimination bonds to highway and parkway purposes, coupled with the Stephens bill allocating \$30,000,000 of this money for parkways, mostly in the metropolitan area.

Enactment of the Williamson bills permitting Westchester to set up a parkway authority, continuing tolls on the Fleetwood Viaduct for twelve years instead of five, and letting the county keep toll moneys on other parkways which were left in its hands after the tolls were ruled illegal.

Creation of a Bureau of Commerce to promote business in the State.

Enactment of the Ives bill for creation of boards of inquiry in labor disputes.

Passage of the Wicks bill to limit the effect of a strike by the Transport Workers Union in New York City, if not actually to bar such a strike.

Continuation of the mortgage Moratorium for another year, with a mild tapering off starting in October of 1942.

Passage of two bills reducing the interest rate on small loans, letting Governor Lehman decide which one to sign.

Adoption of the Morgan bill barring unemployment-insurance benefits to those who voluntarily quit the labor market.

Adoption of the Hastings bill permitting old-age assistance to non-citizens, thus removing 15,000 persons from home relief rolls.

Enactment of the Armstrong bill permitting persons on relief to accept part-time employment, with appropriate deductions for the amount so earned.

Killing of various bills designed to bar Communists and other subversive elements from the ballot.

Creation of a legislative commission to prepare a re-appointment plan for adoption next year.

Continuation of the Rapp-Coudert School Investigating Committee.

Enactment of the Mitchell Urban Redevelopment bill, designed to foster limited-dividend housing projects in the medium-rental scale, giving private groups a right of condemnation in certain circumstances.

Adoption of the Andrews bill stating in the statute law the constitutional provisions against racial discrimination.

Adoption of a constitutional amendment, to be submitted to the people for ratification this Fall, fixing the term of State Senators at four years, instead of two.

Defeat of Governor Lehman's proposal for a \$50,000,000 bond issue for State institutions, particularly for Manhattan State Hospital.

Defense Enactment of measures designed to protect trainees and National Guardsmen inducted into Federal service, as to civil liabilities, insurance, pensions, etc.

Creation of the State Defense Council as a statutory body and authorization for local defense councils.

Enactment of an explosives-control law.

Appropriation of \$600,000 for a vocational educational program.

Enactment of a defense housing law putting State credit behind city-sponsored projects for defense workers.

Prohibition against discrimination in defense industries.

Enactment of a police mobilization bill.

Financial Adoption of a budget totaling, with the supplemental budget, about \$383,500,000, with about \$2,500,000 more to be spent outside the budget, making appropriations in effect total \$386,000,000, as compared with \$394,000,000 last year.

Dropping of the 1 per cent emergency income tax so that it will not be collected next year on this year's incomes.

Ending of double taxation of odd-lot transactions on the Stock Exchange (see below).

Provision for collection of the regular income tax in four quarterly installments, starting in 1944.

Adoption, with a second enactment necessary in 1943, of the Moffat proposal for a tax reserve system to tide the State through lean fiscal periods.

Seizure by the State of \$7,300,000 in unclaimed con-

demnation awards, with half left to New York City for reduction of the burden on real estate, and the other half going for capital improvements for the State itself.

Enactment of a measure permitting cities to make their first installment payment on serial bonds eighteen months after issue, instead of a year.

New York City Adoption of a financial plan for the city dividing up a \$25,000,000 relief surplus with benefit to real estate, general business, and Mayor La Guardia's budget problem, coupled with reenactment of the business turnover tax at half its present rate.

Adoption of the Moffat bill giving the city a higher debt limit of \$40,000,000 for the purchase of subway equipment.

Adoption of the Steingut bill validating the leasing of 250 buses in Brooklyn.

Defeat of Coudert bills reducing the mandatory retirement age of teachers from 70 to 65.

Enactment of three Coudert bills giving the city the right to appoint receivers of taxes for delinquent property, instead of forcing the sale of such properties.

Adoption of a codification of the rapid-transit law, prepared by Reuben A. Lazarus, the city's legislative representative.

When the session ended, 1,106 bills were left in the hands of Governor Lehman for signature. Claiming that the Legislature's total enactments would unbalance the budget by some \$25,000,000, he vetoed a number of measures affecting State finances, including the Coudert bill to eliminate double taxation of odd-lot transactions on the Stock Exchange, a bill dealing with the use of stock transfer stamps, and four bills transferring to localities fees estimated at \$720,000. A record total of 378 bills was vetoed for the entire legislative session.

Four measures were submitted to a vote of the people in 1941. Only one was defeated—a proposal to increase the term of State senators from two to four years. A measure was adopted permitting the transfer of funds (limited to \$60,000,000) from bond issues authorized for grade-crossing elimination, to be used for State highways and parkways. An unusual amendment permitted construction of twenty miles of ski trails on White Face Mountain, Essex County.

Finances. Total tax collections in New York for the fiscal year ending in June, 1941, were \$614,837,000 (1940. \$587,735,000). Total sales taxes amounted to \$137,736,000, including motor fuel, \$75,381,000, alcoholic beverage, \$38,269,000, tobacco products, \$23,846,000. Taxes on specific businesses ran to \$73,750,000, general and selective property (1940), \$2,977,000, betting, \$6,565,000, inheritance, estate, and gift, \$27,668,000, unemployment compensation, \$130,463,000. The net income taxes were \$174,382,000.

Cost payments for the operation of general government totaled \$465,187,000 in 1939, the latest year available. (Revenues for the general government for that year were \$585,916,000.) Cost of operation per capita was \$34.83. Total gross debt outstanding in 1941 was \$751,757,000, as compared with \$579,864,000 in 1932.

Officers and Judiciary. The Governor is Herbert H. Lehman (Dem.), inaugurated in January, 1939, for his fourth 4-year term; Lieutenant Governor, Charles Poletti, Secretary of State, Michael F. Walsh; Attorney General, John J. Bennett, Jr.; Division of Treasury, Frank S. Harris. Chief Justice of the New York Court of Appeals is Irving Lehman; there are six associate members elected by popular vote for 14-year terms. See FLOOD CONTROL; INSURANCE.

NEW YORK CITY. See ART; COMMUNISM; DAMS; FASHION EVENTS; MUSIC; PORTS AND HARBORS; RAPID TRANSIT; SEWERAGE AND SEWAGE DISPOSAL; SOCIALISM; TUNNELS; UNITED STATES under *Civil Liberties*. For aquarium, see ZOOLOGY.

NEW ZEALAND. A British Dominion in the South Pacific Ocean; principally two islands about 1,200 miles east of the southeastern coast of Australia. The Dominion has jurisdiction over Western Samoa (see SAMOA), the Union Islands (including Tokelau), and some other islands of Oceania; also over the Ross Dependency, a part of the Antarctic Zone. Capital, Wellington.

Area and Population. New Zealand proper has an area of 103,722 square miles; of this, North Island has 44,281 and South Island 58,092. Union Islands: area, 4 square miles; population, 1,176. The Ross Dependency has no reported definite area or resident population. New Zealand, by estimate for 1939, had 1,626,486 inhabitants, including 88,997 Maoris (aborigines of Polynesian race). By census of 1936 the population numbered 1,573,810: on the North Island, 1,018,036; South Island, 554,455. Totals of 1936 included 1,484,528 of European origin, 82,326 Maoris and half-castes, and 2,899 Chinese. Estimated populations of the chief cities on Apr. 1, 1940, were: Auckland, 222,900; Wellington, 162,800; Christchurch, 135,500; Dunedin, 82,700; Invercargill, 26,400; Wanganui, 26,100; Palmerston North, 25,500. The birth rate rose steadily from 17.4 per 1,000 in 1935 to 22.6 in 1940; the death rate was 8.7 in 1935 and 9.7 per 1,000 in 1940. Immigration in year ended Mar. 31, 1940, 31,432; emigration, 25,404.

Education and Religion. Primary education is free and compulsory. As of Jan. 1, 1940, there were 2,230 public primary schools, with 205,066 pupils; 304 private primary schools, with 28,280 pupils; 145 native village schools, with 10,193 pupils, 169 public and 60 private secondary schools, with a total of 37,437 students; the University of New Zealand (with units in Dunedin, Christchurch, Auckland, and Wellington), with 5,979 students; and various special and vocational schools. According to the 1936 census, 40.28 per cent of the population belonged to the Church of England, 24.66 per cent were Presbyterians, 13.09 per cent Roman Catholics, and 8.11 per cent Methodists.

Production. The economic system rests upon the production of agricultural and animal products for export, but manufacturing is rapidly expanding. Cattle in 1941 numbered 4,540,000 (1,855,000 dairy cows). Other livestock in 1940: 31,050,850 sheep, 27,581 horses, 714,000 swine. Meat production during 1940 totaled 502,500 tons (beef, 177,000; mutton and lamb, 288,000, pork, 37,500). Of this total, 334,500 tons were exported and 168,000 tons consumed in New Zealand. Wool exports in 1940 amounted to 890,738 bales (822,508 in 1939); butter and cheese, 2,637,683 cwt. (of 112 lb.). Crop yields for the year ended June 30, 1941, were: Wheat, 10,000,000 bu.; oats, 2,700,000 bu.; barley, 1,100,000 bu. War conditions produced a marked expansion of cereal and flax production. The coal output in 1940 was 2,516,099 long tons; gold, about 6,100 kilograms. During the year ended Mar. 31, 1940, there were 6,342 manufacturing establishments in operation; they employed 108,722 persons and the value of their production was £NZ44,120,000, an increase of 12.8 per cent over 1938-39. In the five years ending in August, 1941, a total of 1,072 new factories, valued at \$35,000,000, were established.

Foreign Trade. For the calendar year 1940, imports into New Zealand were valued (in New Zealand currency) at £48,998,000; exports, £73,741,000. The United Kingdom sent £23,108,000 of the imports and took £64,146,000 of the exports; Australia sent £8,227,000 and took £2,166,000; the United States sent £5,885,000 and took £2,826,-

000. The year's exports of wool were valued at £16,875,000; meat, £20,114,000; butter and cheese, £18,228,000.

Finance. Actual ordinary budget returns (excluding war, social security, and public works accounts) for the fiscal year ended Mar. 31, 1941, showed revenues of £NZ40,438,000 and expenditures of £NZ38,712,000. War expenditures during 1940-41 totaled about £NZ37,500,000; social security (excluding administration expenses), £NZ12,193,949. The public debt on Mar. 31, 1940, was £NZ322,908,000. The average exchange value of the New Zealand pound was \$3.5482 in 1939, \$3.0638 in 1940.

Transportation. On Mar. 31, 1940, there were 3,390 miles of state railways and 198 miles of private lines. Gross earnings of the state lines in 1940-41 were about £NZ11,000,000; net earnings, £NZ1,189,031. In 1939-40 passengers on state lines numbered 24,454,014; freight, 7,673,950 tons. Highways extended 87,760 miles (see ROADS AND STREETS). Internal air lines covered 1,887 miles of routes (1939) and in 1940 air connections were established with the United States via Hawaii. There is also a line to Australia. In 1939, 644 vessels of 2,974,833 tons entered New Zealand ports in the overseas trade.

Government. Executive power is exercised by a Governor General, appointed by the Crown for five years on recommendation of the Dominion Government. Legislative power rests with the Governor General and a Parliament of two chambers—the Legislative Council of 36 members appointed by the Governor General for seven years, and the House of Representatives of 80 members, elected by general male and female suffrage for three years. Sir Cyril L. N. Newall, former Chief of Staff of the Royal Air Force, was appointed Governor General Oct. 4, 1940, and was sworn in Feb. 22, 1941.

HISTORY

War with Japan. The entrance of Japan into the World War on December 8 (Auckland time) confronted New Zealand with imminent danger of invasion. The crisis, long anticipated, was met calmly and resolutely by a forewarned and fully prepared nation. The New Zealand Cabinet declared that a state of war existed with Japan as of 11 a.m. December 8. Fully matured plans were placed in effect for full mobilization of defense forces and for placing the country on a complete war footing. There was a further drastic cut in the gasoline ration. Privately owned cars and trucks were commandeered to permit complete motorization of home defense forces. Completion of mobilization by all expeditionary and home defense units was ordered by Jan. 10, 1942. Trained civil defense services were placed on an emergency basis.

War Preparations. In anticipation of the crisis, the Government pressed vigorously forward throughout 1941 with an ambitious program for strengthening the armed forces. At the end of October, it was announced that one-fifth of the entire population was enrolled in defense services of one kind or another. There were 80,000 men in the active armed forces, 138,000 in home military defense units, and 95,000 in civil defense organizations. The navy personnel totaled 4,000, the air force abroad 4,300, and the total aviation personnel at home and abroad 13,500. The home army had 35,500 first-line troops.

The drafting of men for military service abroad and for home defense training under the 1940 conscription law was speeded up early in 1941. Prime Minister Fraser announced March 6 that the air

training program was operating at the planned maximum capacity. A series of national preparedness parades in the principal cities spurred war training. Extensive war games were held in May to test plans for repelling invasion. The enrollment of all married men in the 18-45 age group for military service was ordered June 17 after the setback in Greece; those in the 21-40 age group were liable to foreign service. On August 1 the Government announced that the Home Guard would be placed under army control. An Air Training Corps to give boys preliminary air training was established. On September 21 the Government ordered mobilization of one-sixth of the home defense force for the duration of the war. The last of the men available for training in the home army were called up early in October.

Establishment of an army staff college was announced October 10. On October 27 a motor transport reserve was created. A new regional home defense system was placed in effect November 15. Coincidentally the Home Defense Minister announced the conversion of mounted infantry and motor regiments of the Home Army into regiments equipped with armored vehicles.

War industries were rapidly expanded and coordinated with the Empire armament production program. A new munitions factory completed in March made New Zealand self-sufficient in small arms and ammunition. The Government recruited women for service in defense factories. Products of these plants included Bren gun carriers, trench mortars, explosive and smoke bombs, steel helmets, and tanks. A Controller of Munitions was appointed May 4 to speed up arms production. Early in November the Government announced acceptance of a "huge" British contract for shell fuses. Shipbuilding facilities were enlarged for the construction of numerous mine sweepers.

Meanwhile the Government sought to coordinate its defense preparations with those of Australia, the British Far Eastern command at Singapore, the Netherlands East Indies, and the United States (see AUSTRALIA under *History*). In line with this policy, an exchange of Ministers with Washington was agreed upon in February and carried into effect in December. Walter Nash, Deputy Prime Minister and Minister of Finance, was named New Zealand's first Minister to the United States. In May Minister of Lands F. Langstone was sent to America to initiate trade negotiations. In particular the Dominion sought an outlet in the United States for its surplus butter, cheese, and meat and authority to purchase American arms.

Ratifications of a treaty for the peaceful settlement of United States-New Zealand disputes were exchanged August 13. Arriving in Washington August 25 on his way home from a lengthy visit to Britain, Prime Minister Peter Fraser spent two weeks in Washington seeking aid for New Zealand under the lend-lease program and closer cooperation in the political and economic fields. From June 20 to mid-August, the Prime Minister was in London, where he went on invitation of Prime Minister Churchill to confer on war plans.

Economic Measures. Far reaching measures were required to adjust the Dominion's export economy to war conditions, particularly the growing shortage of shipping facilities. On February 9 the Government undertook to guarantee payment for all meat produced for export, regardless of the amount actually taken by the British Government. Expanded storage facilities enabled the Government to hold in reserve export stocks of food for which shipping was not available.

The sinking of some 25 per cent of the refrigerator ships normally engaged in carrying New Zealand meat and dairy products to Great Britain caused serious difficulties during the second quarter of the year. But this crisis was relieved by the large-scale development of meat canning, an extensive switch in production to cheese instead of meat, the use of ordinary freighters instead of refrigerator ships for exporting meat and dairy products, and increased British purchases of cheese, bacon, etc. Strict Government control was established over all shipping space and in all departments of foreign trade.

Other economic measures taken during the year included the abandonment of the 40-hour week in favor of longer hours in war industries, restrictions on price rises, the conservation of electric power for war purposes at the expense of peace-time services, and expansion of flax production at the request of the British Government. The carrying out of these and other related measures was facilitated by the fact that extensive government control over the economic system had been established prior to the outbreak of war. The financing of the war through March, 1942, was assured through the subscription of a £10,000,000 war loan in September.

Political Developments. Two contradictory political trends made themselves evident during the year. There was a growing public demand for an end to partisan politics as an aid to national unity and to successful prosecution of the war. On the other hand elements opposed to the Labor Government's socialistic program were alarmed by the rapid extension of Government control over the Dominion's economy under the stimulus of war. This led in February to the absorption of several small Opposition groups by the Nationalist party, which held about one-third of the seats in the House of Representatives. The Opposition attacked the Government because of its refusal to form an all-party coalition Cabinet for the duration of the war; its resistance to the demand of industrialists, farmers, and others for abandonment of the 40-hour week in industry; and its insistence upon maintaining and extending social services during the crisis. The Opposition leader, Sidney Holland, demanded a greater war effort, the restoration of personal liberty, and an end to further socialistic encroachments.

In April the Government agreed to drop the 40-hour week in war industries, and the annual policy conference of the Labor party recorded its determination to throw every effort into the winning of the war. Prime Minister Fraser on April 16 told the conference that Labor would forfeit the confidence of the people if it did not place war needs ahead of social advancement. However, the radical minority wing of the Labor movement rejected this policy in favor of immediate nationalization of the banks and other socialistic measures. The sweeping defeat administered Labor candidates in the local elections in May—the worst setback in 20 years—was believed to indicate public dissatisfaction with radical influences within the party.

Following the British defeat in Crete the Government acquiesced in further extensions of the working week. Results of a hard-fought by-election in the Waitemata district on July 21 were disputed, with both sides claiming victory. After consulting Opposition leaders, Prime Minister Fraser on October 15 announced that the general election due to be held that month had been postponed for one year because of the increasingly grave international situation.

The Government on July 15 announced its cor-

dial approval of the Anglo-Russian mutual assistance pact. However it did not welcome the resurgence of the New Zealand Communist party, which although not illegal had worked under cover previous to Russia's entry into the war. In September the Communists announced that they would contest three seats in Wellington in the next general election.

Medical Insurance. The Government also ran into difficulties in its efforts to inaugurate national free medical care. It put into effect on March 1 a scheme under which any New Zealander was made eligible for free medical treatment by obtaining a registration card. A patient could take the card to any doctor of his choice, and the doctor was to receive the equivalent of \$3.50 for each patient treated during a year upon presenting the card to local health officials. Doctors were required to provide suitable accommodations for surgery and to visit patients unable to go to their offices.

The doctors were virtually unanimous in refusing to cooperate with the Government on this basis. The Government then made repeated efforts to put the scheme into operation in revised form. Most of the registered druggists agreed to accept payment from the State for all doctors' prescriptions made up by them. Some of the fraternal and other free societies were induced to accept the Government's offer of free medical services for their members. Again the doctors refused to cooperate. The House of Representatives on October 4 then passed a new measure under which doctors could collect their fees direct from patients instead of from the State. The patient was then to collect the equivalent of his doctor's fee from the State Security Fund. However the legal right of doctors to collect unpaid fees through the courts was withdrawn. This latter feature of the plan aroused further protest from the medical profession. Nevertheless the new program went into effect November 1 with most of the physicians cooperating.

See **ARCHAEOLOGY, BIRTH CONTROL; CHEMISTRY, INDUSTRIAL, JAPAN under History; LEND-LEASE ADMINISTRATION; LIVESTOCK, NEWSPAPERS AND MAGAZINES; SOCIALISM.**

NICARAGUA. The largest in area of the Central American republics. Capital, Managua.

Area and Population. Area, 49,500 square miles; estimated population in 1940, 1,133,572. Chief cities (1938 estimates): Managua, 70,000, León, 32,669; Granada, 21,172, Masaya, 15,000; Matagalpa, 5,200. The people are mainly of Spanish, Indian, or mixed blood, but there is a considerable infusion of West Indian Negroes on the east coast.

Defense. The National Guard had an active personnel of 3,474 as of Nov. 1, 1940. The navy comprises a small number of coastal patrol boats. A new military academy was established in 1940 with a United States army officer as director.

Education and Religion. About 60 per cent of all adults are illiterate. In 1938 there were 630 State primary schools, 2 normal, 13 private secondary, 5 professional, and various other schools, with an enrollment of about 49,000, besides three universities. Primary school teachers in 1941 numbered 1,294. There was a 30 per cent increase in the education budget in 1940-41 over the preceding year. Roman Catholicism is the prevailing religion but other faiths have religious freedom.

Production. Agriculture, cattle raising, gold mining, lumbering, and manufacturing for local consumption are the chief occupations. The value of gold exports increased from \$849,000 in 1937 to \$5,758,000 in 1940, accounting for 60.6 per cent of all

1940 exports. Coffee was the leading export product prior to 1939, shipments in 1940 totaled 33,650,000 lb., valued at \$2,094,000 (22.1 per cent of all exports). Banana exports amounted to 1,156,000 stems worth \$446,000 in 1940. Beans, rice, corn, and sugar are the leading food crops; plantains, rice, yucca, tobacco, and cacao also are grown. Sugar refining is the chief manufacturing industry. There are numerous coffee-cleaning mills.

Foreign Trade. Imports in 1940 totaled \$7,052,486 and exports \$9,494,142, resulting in the largest export balance since 1926. The 1939 figures were: Imports, \$6,364,891, exports, \$8,300,972. Gold, coffee, bananas, and lumber, in the order named, were the principal 1940 exports (see *Production*). The United States supplied 84 per cent of the 1940 imports (68.4 per cent in 1939) and took 94.2 per cent of the exports (77.5 in 1939).

Finance. Budget estimates increased from 6,340,000 cordobas in 1937-38 to 20,281,429 in 1939-40 and 25,530,219 in 1940-41. The President in his message to Congress of Apr. 20, 1941, stated that the Treasury closed every fiscal year of this period with a surplus. The public debt rose from 18,529,633 cordobas on Jan. 31, 1940, to 22,011,770 cordobas on Jan. 31, 1941. The latter figure represented bonds in pounds sterling, dollars, and cordobas as follows: £434,547, \$2,018,645, and 3,140,700 cordobas. The dollar debt included \$1,140,000 of used credits out of \$4,500,000 of loans made available by the Export-Import Bank of Washington, D.C. Official exchange rate of the cordoba, \$0.20 in 1939 and 1940, average curb rate, \$0.1869 in 1939 and \$0.1572 in 1940.

Transportation. Nicaragua in 1940 had 227 miles of nationalized railways in operation and a few miles of privately owned track, a steamboat service on Lake Nicaragua, 1,882 miles of highways (595 miles surfaced), and Pan American Airways and five local air services. Freight carried by air in 1940 was 15,322,342 lb. The chief ports are Cornito and San Juan del Sur on the Pacific and Bluefields, Cabo Gracias, Puerto Cabezas, and San Juan del Norte on the Caribbean.

Government. The Constitution of Mar. 22, 1939, vested executive powers in a President elected for eight years and legislative powers in a parliament of two chambers—a Senate of 15 elected members with all ex-Presidents serving *ex officio*, and a Chamber of Deputies of 42 elected members. The terms of Senators and Deputies is six years. President in 1941, Gen. Anastasio Somoza. He assumed office Jan. 1, 1937, for a four-year term, was re-elected by a Constituent Assembly Mar. 23, 1939, and inaugurated for an eight-year term Mar. 30, 1939.

History. President Somoza gave the Nicaraguan Government's full and prompt support to the United States at the outset of the latter's conflict with Japan, Germany, and Italy. He followed a consistently partial line of conduct to the United States in 1941, throughout the developments prior to American belligerency. On December 11 Nicaragua itself declared war on Japan, Germany, and Italy; on December 20, likewise on Rumania, Hungary, and Bulgaria.

As early as February 1 Somoza, speaking for publication, invited the United States to establish naval and air bases on the Nicaraguan coasts and offered full support to United States policies. Foreigners living in Nicaragua were ordered, January 26, to register within 30 days. In addressing the convening Congress, April 11, Somoza declared that cooperation with the United States would continue. On May 6 a reputed leader of a Nazi move-

ment in Managua, having made threats of what the country might expect for antagonizing German power, was seized and held for deportation. A Presidential decree of May 9 required special permission for exportation of war materials, thus tending to exclude other buyers in the United States' favor. The journal *Estrella de Managua*, said to be blacklisted by the United States, was suspended, August 16; resuming later, it gave up publication in December. Ex-President Arias of Panama, who had been ousted from that country after causing trouble to the U.S. Government, was refused permission October 22, to leave Managua, to which he had withdrawn. On November 13 Somoza expressed his readiness to help the United States, at 24 hours' notice, with 10,000 Nicaraguan troops and all military facilities.

Nicaragua at the same time gained many advantages from its close cooperation with the United States. The loss of other commercial contact, stopped by war, reduced external trade, but trade with the United States largely offset the reduction and came to constitute 96 per cent of Nicaraguan exports and 92 of imports for the first quarter of 1941. An additional loan of \$2,000,000 made by the U.S. Export-Import Bank in March assured the continuation of work on Nicaragua's intended hard-surfaced highway between Managua and the Atlantic coast.

Political conditions in the country held stable throughout the year, despite the incentive for antagonistic powers' agents to disturb them. Somoza continued as economic dictator, his sway over the country's economy being prolonged by the Congress in September for a third year. The budget for 1941-42 provided for a rise of 10 per cent in the pay of the Government's servants. A military school of aviation and a Central University were opened at Managua, September 15, as part of Somoza's plans for improving education. The country was studied during the year, for interests in the United States, as to its fitness for the cultivation of rubber trees and of abaca.

See FINLAND under *History*, GEOLOGICAL SURVEY; MOTOR VEHICLES, PAN AMERICANISM, PAN AMERICAN UNION.

NICKEL. The United States gets its nickel entirely from foreign imports, consumed two-thirds of the world's supply in 1941 and could have used more. Of the available supply 90 per cent plus went into high priority war orders. It was put under mandatory priority control in May, 1941. The war program took 63 per cent of the available supply as an alloy for toughening steel and this one use is expected to devour more and more with the planned expansion of electric furnace capacity.

The 1940 consumption was 170,000 tons. The 1941 imports totaled about 93,000 tons, of which 3,000 tons were taken from secondary sources. Of this total 90 per cent came from Canada, 5 per cent from New Caledonia. Domestic production includes only very small quantities of secondary metals taken from scrap-nickel anodes, nickel-silver, and copper-nickel alloys and insignificant amounts of primary metal recovered in copper refining.

The gravity of the nickel shortage became definitely apparent with the supply coming in at the rate of about 7,500 tons a month and the United States consuming about 10,000 tons a month. The available supply for 1942 was estimated at 110,000 tons. This figure does not include nickel to be recovered from scrap. In January, 1942, the Federal government passed a bill changing the content of U.S. 5¢ pieces from $\frac{1}{4}$ nickel, $\frac{3}{4}$ copper to $\frac{1}{2}$ silver,

$\frac{1}{2}$ copper in order to release 434 tons per year of nickel to war uses.

Steel mills, including manufacturers of alloy steels, used 70 per cent of the imported refined nickel in 1941. Foundries used 7.3 per cent; brass mills, 6.5 per cent, heat resisting and electrical resistance alloy manufacturers, 4.6 per cent; electroplaters, 2.5 per cent. Rolled nickel and high nickel alloys consumed the rest. The price of nickel in the United States and Canada remained the same, 1926-41, at 35¢ a lb. f.o.b. refinery or mill.

NIGER. See FRENCH WEST AFRICA.

NIGERIA. A British West African colony (1,381 sq. mi.) and protectorate (includes British Cameroons). Total area, 372,599 square miles; total population (1939), 20,641,814, of whom 335,544 were in the colony. Chief towns (1939 populations): Lagos (capital), 167,000, Ibadan, 318,320 (including farming suburbs); Kano, 80,634; Abokuta, 69,500; Ogbomosho, 64,680, Oyo, 63,170. Education (1939). 40,763 schools of all kinds and 543,618 students.

Production and Trade. The main agricultural products are palm oil, cacao, groundnuts (225,000 tons in 1940-41), bananas, rubber, tobacco, maize, cotton (70,000 bales in 1940-41), ginger, sesamum, and rice. Chief minerals (with 1940 production figures)—tin (12,012 long tons), gold (25,617 fine oz.), coal (300,091 long tons for 1939-40), and silver. There are deposits of manganese, galena, lignite, columbite, wolfram, and monazite. Other products—gum arabic, mahogany, ghee, hides and skins. Livestock (1938): 2,936,000 cattle, 2,188,000 sheep, 5,630,000 goats, 476,000 asses, 173,000 horses, 168,000 swine, 2,000 camels. Trade (1940), including bullion: £7,476,000 for imports and £11,388,000 for exports. Shipping (1939). 3,588,557 aggregate tons entered and cleared.

Communications. Railways (1939-40): 2,341 route miles; 4,828,703 passengers and 712,087 tons of freight were carried. Roads (1940): 21,277 miles. Lagos is an important base for seaplanes and landplanes in the air communications of the British Empire, and a link in Pan American Airways' ferry and transport services from the United States to the Middle East and the Belgian Congo, by way of the Caribbean islands and Brazil.

Government. Finance (1940-41)—Deficit estimated at £30,000 (1941-42)—Deficit estimated at £97,960. The public debt on Mar. 31, 1940, amounted to £24,936,599. Nigeria, including the British Cameroons attached to the protectorate for administrative purposes, is under the control of a governor assisted by an executive council. There is a legislative council for the colony and the southern provinces of the protectorate. The governor enacts the laws affecting the northern provinces. Governor and Commander-in-Chief, Sir Bernard Bourdillon (appointed Oct. 16, 1935; term extended to December, 1943).

History. The Police Commissioner of Nigeria, Col. A. S. Mavrogordato, on his arrival in New York, Feb. 26, 1941, revealed that Nigeria had sent 10,000 troops to the East African front. It was announced in April that an Arbitration Tribunal and a Board of Inquiry were to be established during 1941 to settle labor disputes and to inquire and report on economic and industrial conditions. As a result of the dislocation of some of the markets for foodstuffs and the high prices caused by the requirements of British armed forces in Africa, the government decided to control prices of market foodstuffs throughout Nigeria.

It was announced in June that a West African Governors' Conference Secretariat had been established with the Governor of Nigeria at its head, the expenses being shared by the governments of the Gambia, Gold Coast, Nigeria, and Sierra Leone.

NIGHTINGALE ISLAND. See BRITISH EMPIRE under *St. Helena*.

NLRB. See NATIONAL LABOR RELATIONS BOARD.

NOBEL PRIZES. The awarding of the Nobel prizes has been suspended for the duration of the war. On Dec 10, 1941, the 40th anniversary of the establishment of the awards, a dinner was held in New York City in honor of Alfred Nobel; nine previous winners were present.

NON-AGGRESSION PACTS. See GERMANY, JAPAN, TURKEY, and UNION OF SOVIET SOCIALIST REPUBLICS, under *History*.

NON-FEDERATED MALAY STATES. Same as *Unfederated Malay States*. See under BRITISH MALAYA.

NORFOLK ISLAND. See AUSTRALIA.

NORTH AMERICA. Excluding Mexico and Central America, but including Greenland, Newfoundland, and smaller adjacent islands, the continent has an area of about 7,589,532 square miles and a population estimated at 141,940,000 on Dec. 31, 1938. The combined area of Mexico, Central America, and the West Indian islands was about 1,073,080 square miles and the population about 40,870,000. See separate article on the constituent countries and territories. Also ARCHAEOLOGY, EXPLORATION, etc.

NORTH AMERICAN AVIATION STRIKE. See LABOR CONDITIONS under *Strikes*.

NORTH CAROLINA. A south Atlantic State. Area: 52,712 sq. mi., including 3,570 sq. mi. of inland water. Population: (1940 census) 3,571,623. The urban population comprises 27.3 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 28.2 per cent (U.S. average, 10.2); elderly (65 years and over), 4.4 per cent. North Carolina ranks 27th among the States in area, 11th in population, and 14th in density, with an average of 72.7 persons per square mile. The capital is Raleigh with 46,897 inhabitants; largest city, Charlotte, 100,899. There are 100 counties and 26 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Clyde A. Erwin, Superintendent of Public Instruction, there were 908,810 pupils enrolled in the public schools of North Carolina during the school year 1939-40, 703,597 in elementary schools and 205,213 in secondary schools. Teaches numbered 25,438 and received an annual average salary of \$890. Total current expenditures for the year 1938-39 were \$30,811,279.

Transportation. State highway mileage in 1939, including streets under State control, totaled 58,495, of which 31,783 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 610,121; 503,494 were private and commercial automobiles, 995 busses, and 87,457 trucks and tractor trucks. Gross motor-fuel consumption was 463,498,000 gallons. Net motor-fuel tax receipts were \$27,372,000, the rate being six cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$8,174,000.

Railways of all classes extended 4,728 miles (Dec. 31, 1939) 2.01 per cent of the total mileage in the United States. Class I steam railways (3,004 miles) reported 6,101,952 tons of revenue freight originating in North Carolina in 1940 and 11,251,072 tons terminating in North Carolina. There are 34 airports and landing fields in the State (11 lighted fields) and eight seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 445 civil aircraft in the State and 1,207 commercial and private pilots (1,041 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 6,399,400, as compared with 6,403,000 acres in 1940. According to the latest census, there are 278,276 farms, valued at \$736,308,125, averaging 67.7 acres each. Farm population numbered 1,654,123 or 46.3 per cent of the total. Leading crops with production in 1941 were: Tobacco, \$134,798,000, 465,235,000 lb.; cotton lint, \$48,094,000, 556,000 bales; corn, \$40,114,000, 52,096,000 bu.; hay, \$17,162,000, 1,091,000 tons; peanuts, \$14,504,000, 284,400,000 lb.; cottonseed, \$12,078,000, 247,000 tons; wheat, \$8,105,000, 7,110,000 bu., sweet potatoes, \$6,192,000, 6,880,000 bu.; potatoes, \$5,110,000, 6,636,000 bu.

Manufacturing. The total value of manufactured products, according to the latest census (for the year 1939) was \$1,421,329,578. For details, see 1940 YEAR BOOK.

Mineral Production. The total value of mineral production in 1939, according to the U. S. Bureau of Mines, was \$18,533,720. The leading item was stone, 6,037,000 short tons valued at \$6,979,426 (3,031,300 short tons, \$4,850,277, in 1939).

Trade. According to the 1940 census there were 2,859 wholesale establishments in North Carolina, employing 30,347 persons, reporting net sales for 1939 of \$831,251,000 and annual pay roll of \$33,838,000. There were 33,826,000 retail stores with 79,404 employees, reporting sales of \$633,240,000 and pay roll of \$60,052,000. Service establishments numbered 10,502, employing 21,791,000 persons for \$13,770,000 per year, and reporting a business volume amounting to \$42,121,000. The leading business center of the State is Charlotte which reported wholesale sales of \$207,901,000, retail sales of \$47,552,000, and \$4,283,000 receipts for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in North Carolina was \$38,177,000. Under the Social Security program, financed by Federal funds matching State grants, 37,549 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$10.18 (U.S. average pension, \$21.08); 23,585 dependent children in 9,858 families received average monthly payments of \$16.89 per family (U.S. average, \$32.73); and 1,911 blind persons received \$14.97 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 4,435 and received \$6.45 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 6,261 (\$415,000); NYA student work program, 5,596 (\$43,000); NYA out-of-school work program, 10,709 (\$207,000); WPA, 30,302 (\$1,446,000); other Federal emergency projects, 56 (\$3,000); regular Federal construction projects, 11,308 (\$1,423,000). The Farm Security Administration certified subsistence payments totaling \$23,000 for the month to 455 cases.

Legislation. The General Assembly convenes in regular session on Wednesday after the first Monday of January in odd years. It is composed of 50 Senators (48 Democrats and 2 Republicans in 1941) and 120 Representatives (114 Democrats and 6 Republicans).

The 1941 General Assembly was in session for 58 legislative days, and expeditiously considered some 1,300 bills. Gov. Broughton's legislative program, emphasizing reorganization of the State government and including important educational, agricultural, and retirement measures, was enacted with only two exceptions: The Assembly refused to strengthen the labor laws or to increase the compulsory school age from 14 to 16 years. The following discussion of important measures comprises excerpts from the *Raleigh News and Observer* of Mar. 23, 1941.

Reorganization. Acting unanimously, or virtually so, in every instance, the Assembly passed a series of reorganization bills which gave to Governor Broughton the greatest power of appointment ever possessed by any North Carolina Governor. Unless existing laws are materially changed in the meantime, the next Governor will inherit that vast power upon taking office in 1945, without the necessity of asking the General Assembly for it.

Four methods were used to enlarge the Governor's appointive power. One elective office, that of Utilities Commissioner, was changed to three appointive ones. Two new departments, both carved out of the Department of Revenue, were created (a Motor Vehicle Department and a Tax Research Bureau). In three instances, six year terms, most of which have not expired, were abrogated and succeeded by four-year terms. Finally, resignations were obtained, some of them after polite intimation that legislation to accomplish the same result would be sought if the resignations were not forthcoming.

Three reapportionment bills were passed, the net effect of each of which was to give greater representation to the Western portion of the State. The West gained one senator and three members of the House and the new 12th Congressional District (required as a result of the 1940 census) was carved from the two districts lying farthest West.

Two constitutional amendments were submitted by the General Assembly to create a new State Board of Education, and to permit the separation of judicial and senatorial districts and the creation of a larger number of superior court judges than solicitors.

Appropriations. Appropriated for the two years beginning July 1, 1941, was approximately \$166,500,000, approximately \$12,200,000 more than the record-breaking spending for this biennium. In voting this record high budget for 1941-43, the legislature did what normally would have been an impossible trick—it increased appropriations while reducing taxes. The answer to that is found in the fact that defense accelerated business will pay more under present tax levies. (The newer estimates upped the expected income tax yield to \$15,096,969 for each of the two coming years, compared with original estimates of \$12,860,000 and \$13,000,000.) A contingent transfer of approximately \$1,150,000 from the highway fund to the general fund also was provided.

Major change in the tax structure was elimination of the sales tax from foods sold for home consumption. That change, a campaign pledge made by Governor Broughton, becomes effective July 1. Next biggest change was that giving local units 75 per cent of collections from intangibles, with the State retaining 25 per cent. The trend has been for a larger share to the localities. As usual, the biggest share of the general fund budget goes to schools.

Agriculture. The largest single group of laws passed by the General Assembly at the request of the Governor was for the benefit of agriculture. The most important of these 13 measures was an act setting up a State Marketing Authority. There were also passed a pure seed law, a trade mark law, an act to regulate bulk milk sales, a livestock act, an act authorizing other products to be stored in bonded cotton warehouses, and an act to extend the federal housing act to rural areas. Other important agricultural legislation consisted of increased appropriations.

Education. The recent Legislature, called by some the kindest friend public education ever had, granted every wish the schools and schoolmen voiced with three principal exceptions. It did not add a month to the basic eight-month State-supported school term, raise the compulsory school attendance age from 14 to 16, or grant teachers sick leave with pay.

On the other hand, the 1941 General Assembly did: Lay foundations for a 12th grade (for units requesting it). Provide for teacher retirement. Grant a ninth pay

increment to teachers (raising to \$183.33 the maximum monthly pay for eight months a year) and a fifth increment to principals. Double the appropriation for vocational education. Provide partial protection against overloading of school busses. Appropriate to reduce the pay differential between Negro and white teachers. Enable State College to build a self-liquidating building which will ultimately be another agriculture school addition. Set in motion a Constitutional amendment to consolidate State school administrative authority. Appropriate to each institution of higher learning more than the Budget Commission recommended, notably \$1,552,675 and \$1,582,519 to the Greater University when recommendations for the next two years were \$1,352,212 and \$1,377,356.

From a strictly teacher standpoint the major gain was the State Employees' Retirement Plan, which the General Assembly set up at \$1,509,076 annually—\$1,200,000 of this for teachers alone. Teachers and other State employees must contribute if they wish to join the system. A disappointment to teachers was the teacher tenure law as eventually passed. Originally, it would have provided that teachers, giving two years of satisfactory service should get two-year contracts. In place of this protection against petty or political firing, the teachers obtained only a provision that teacher contracts shall continue from year to year unless notice is given 30 days before end of school.

Labor. The so-called uniform sabotage bill, backed by the Council of State Governments and other national organizations, was introduced. The bill was attacked by all national labor organizations as an anti-union bill. At the suggestion of Governor Broughton, the bill was changed in this State to a short measure defining sabotage as destruction of property and its passage in that form was not opposed by labor. Two changes were made in the unemployment compensation laws, one benefiting employees and the other employers. The maximum benefit remains at \$15, but the minimum figure was changed to \$3 a week and corresponding increases were made in all other brackets except the top one. On the other hand, penalties were made more severe. A conciliation service in the Department of Labor was provided, but no appropriation was made for it.

Local. From a local standpoint, the most important measure passed was the bill providing for an election on the extension of Raleigh's city limits—a hot subject for the last two decades. Hundreds of local bills were introduced. However, local ax-grinders got little, and the most objectionable of local fence-building legislation was quietly sidetracked.

An even dozen commissions to be appointed by the Governor were authorized. The most important miscellaneous acts were a ban upon fortified wine in dry counties and creation of a State Home Guard. Absentee voting also was provided for soldiers, sailors, and marines during the period of the present national emergency. Salary increases were the vogue from the very first day of the session.

Finances. Total tax collections in North Carolina for the fiscal year ending in June, 1941, were \$99,532,000 (1940: \$86,240,000). Total sales taxes amounted to \$46,823,000, including motor fuel, \$30,066,000, general sales, \$14,247,000. Taxes on specific businesses ran to \$10,733,000, general and selective property, \$2,739,000, unemployment compensation, \$12,644,000. The net income taxes were \$14,401,000.

Cost payments for the operation of general government totaled \$63,436,000 in 1939, the latest year available. (Revenues for the general government for that year were \$101,619,000.) Cost of operation per capita was \$18.03. Total gross debt outstanding in 1941 was \$150,613,000, as compared with \$188,616,000 in 1932.

Officers and Judiciary. The Governor is J. Melville Broughton (Dem.), inaugurated in 1941 for a four-year term; Lieutenant Governor, R. L. Harris; Secretary of State, Thad Eure; Attorney General, Harry McMullan; State Treasurer, Charles M. Johnson; State Auditor, George Ross Pou. Chief Justice of the North Carolina Supreme Court is W. P. Stacy; there are six associate members elected by popular vote for eight-year terms.

NORTH DAKOTA. A west north Central State, nicknamed "The Sioux State." Area: 70,665 sq. mi., including 611 sq. mi. of inland water. Population: (1940 census) 641,935. The urban population comprises 20.6 per cent of the total (U. S. average, 56.5 per cent); non-white population, 1.5 per cent (U. S.

average, 10.2); elderly (65 years and over), 6.0 per cent. North Dakota ranks 16th among the States in area, 38th in population, and 40th in density, with an average of 9.2 persons per square mile. The capital is Bismarck with 15,496 inhabitants; largest city, Fargo, 32,580. There are 53 counties and four cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Arthur E. Thompson, Superintendent of Public Instruction, there were 139,629 pupils enrolled in the public schools of North Dakota during the school year 1940-41, 105,734 in elementary schools and 33,895 in secondary schools. Teachers numbered 7,361 and received a monthly average of \$85. Total expenditures for the year were \$9,979,781.47.

Transportation. State highway mileage in 1939, including streets under State control, totaled 7,387, of which 6,358 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 184,016; 145,746 were private and commercial automobiles, 157 busses, and 36,384 trucks and tractor trucks. Gross motor-fuel consumption was 147,246,000 gallons. Net motor-fuel tax receipts were \$3,452,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$1,661,000.

Railways of all classes extended 5,267 miles (Dec. 31, 1939) 2.24 per cent of the total mileage in the United States. Class I steam railways (5,133 miles) reported 4,985,837 tons of revenue freight originating in North Dakota in 1940 and 3,001,401 tons terminating in North Dakota. There are 30 airports and landing fields in the State (10 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 134 civil aircraft in the State and 591 commercial and private pilots (535 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 17,482,000, as compared with 16,964,200 acres in 1940. According to the latest census, there are 73,962 farms, valued at \$490,197,358, averaging 512.9 acres each. Farm population numbered 327,871 or 51.1 per cent of the total. Leading crops with production in 1941 were: Wheat, \$137,426,000, 146,198,000 bu.; oats, \$18,158,000, 58,575,000 bu.; barley, \$17,470,000, 43,675,000 bu.; corn, \$12,833,000, 24,679,000 bu.; hay, \$10,838,000, 3,198,000 tons, flaxseed, \$7,550,000, 4,576,000 bu.; potatoes, \$6,936,000, 14,155,000 bu.; rye, \$5,947,000, 13,516,000 bu.

Manufacturing. The total value of manufactured products, according to the latest census (for the year 1939) was \$43,767,082; 350 establishments employed 2,637 wage earners, who received \$2,771,468 for the year.

Mineral Production. Minerals produced in 1939 were valued at \$2,689,627, or only .06 per cent of the United States total, according to the U.S. Bureau of Mines. Coal accounted for most of the total.

Trade. According to the 1940 census there were 2,682 wholesale establishments in North Dakota, employing 5,901 persons, reporting net sales for 1939 of \$170,252,000 and annual pay roll of \$7,195,000. There were 8,549 retail stores with 15,227 employees, reporting sales of \$156,137,000 and pay roll of \$12,960,000. Service establishments numbered 2,500, employing 1,760 persons for \$1,407,000 per year, and reporting a business volume amounting to \$6,643,000. Fargo is the leading business center of the State and reported wholesale

sales of \$43,976,000 and retail sales of \$20,350,000. Cass County, including the city of Fargo, is the leading county in the State in the volume of receipts from its service establishments (\$1,518,000).

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in North Dakota was \$14,096,000. Under the Social Security program, financed by Federal funds matching State grants, 9,234 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$17.41 (U.S. average pension, \$21.08); 6,946 dependent children in 2,502 families received average monthly payments of \$31.24 per family (U.S. average, \$32.73); and 219 blind persons received \$19.37 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 2,556 and received \$12.74 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 2,307 (\$153,000), NYA student work program, 4,334 (\$25,000), NYA out-of-school work program, 2,501 (\$43,000), WPA, 9,918 (\$526,000), regular Federal construction projects, 1,202 (\$104,000). The Farm Security Administration certified subsistence payments totaling \$9,000 for the month to 368 cases.

Legislation. The Legislative Assembly convenes in regular sessions on Tuesday after the first Monday of January in odd years. It is composed of 49 Senators (5 Democrats and 44 Republicans in 1941) and 113 Representatives (10 Democrats and 103 Republicans). The following summary of legislative action in 1941 has been condensed from the *Fargo Forum*, Mar. 9, 1941.

In decided contrast to recent sessions, tax matters played but a minor part in 1941.

A big spark of the session was struck when the house, spurred by the county commissioners, passed a bill transferring 100 per cent of the cost of patients at the Jamestown asylum, Grafton training school and San Haven tuberculosis sanatorium from the counties to the state, a step that would have thrown the state budget out of balance by \$1,700,000. The problem was compromised with a program that will give 60 to 70 per cent relief to the counties. The legislature provided two forms of county manager plans which any county may adopt upon a 55 per cent favorable vote, as an economy measure against maintaining the present commission form. A new law was passed providing for the disorganization of counties.

A high point of the session was the practical absence of any dissent over how much money should be appropriated for the different public welfare programs and how the relief program should be handled. An item of apprehension, especially to Governor Moses, is that the general relief fund was cut to \$1,157,000, about \$850,000 under the expenditures of the present biennium. However, old age assistance was increased by \$700,000. The legislation authorized the establishment of merit systems in the welfare programs, but refused to repeal the \$40 a month minimum provision contained in the Langer-initiated measure. Federal authorities had warned that this statute put federal matching funds for North Dakota in danger because the state laws do not conform with federal law. But the legislature passed a resolution directing the board to make old age grants on the basis of need. Grants are expected to average \$20 a month per recipient, in comparison to the present average of \$16.90.

Headlining highway legislation was reenactment of the additional one-cent gasoline tax to provide an estimated \$1,700,000 for the biennium for matching federal funds on a 50-50 basis to construct new roads, assuring \$3,400,000 in construction from that source alone.

Liquor legislation ran the gamut. The initiated measure of 1936 legalizing hard liquor in North Dakota was amended by a two-thirds vote, thereby subjecting it to amendment or repeal by a simple legislative majority. The box score was 20 liquor bills; 16 defeated, 4 passed, including 2 routine bills.

Institutions of higher learning generally received slight increases in appropriations. A completely revised program for aid to common schools was put through without any of the opposition generated against the program two years ago. Grants on the basis of need will continue to be made to only those schools which can show they have made

"their greatest financial effort," including increasing by election their top tax limit

Girls who quit work to get married can no longer get unemployment compensation, nor can persons who quit to become students. However, employers with good employment experience will get reductions in the unemployment tax to as low as 1 per cent of the payroll in 1942, when experience ratings go into effect. The present rate is 2.7 per cent.

The legislature set up a state guard under federal and state administration, the guard units to be located only in those places where a national guard company had been previously organized. Other bills affected protection of men mobilized into the service as regards their unemployment compensation benefits accrued in anticipation of defense industries in North Dakota a bill was enacted setting up authority to cooperate with federal agencies in providing housing facilities

Legislative observers are wondering what the future will do for the Farmers Union, the organization which put such a big exclamation point on its drive to stop repeal of the anti-corporation farm ownership law by bringing 5,000 members into Bismarck for a one-day demonstration. The amendment was killed, and another Farmers Union victory was evident in the \$100,000 appropriation for high school correspondence work, the argument over which started the deadlock that blocked punctual adjournment of the assembly. Farmers Union strength also accounted for absence of any attempt to repeal the anti-deficiency judgment law and the hail tax prior lien law. Some say the group overplayed its hand at this session; others contend it is a power to be reckoned with

Attempted changes in the state's election laws failed. The state was not divided into two congressional districts, nor was the legislative lineup revamped on the basis of the state's 1940 census. Proposals to put the state officials and legislature on a no-party basis and to make county and state office terms four years instead of two got nowhere.

Finances. Total tax collections in North Dakota for the fiscal year ending in June, 1941, were \$16,094,000 (1940: \$14,062,000). Total sales taxes amounted to \$8,580,000, including general sales, \$3,364,000, motor fuel, \$3,419,000. Taxes on specific businesses ran to \$353,000, general and selective property, \$3,633,000, unemployment compensation, \$736,000. The net income taxes were \$700,000.

Cost payments for the operation of general government totaled \$14,837,000 in 1939, the latest year available. (Revenues for the general government for that year were \$20,326,000.) Cost of operation per capita was \$22.97. Total gross debt outstanding in 1941 was \$23,069,000, as compared with \$45,449,000 in 1932.

Officers and Judiciary. The Governor is John Moses (Dem.), inaugurated in January, 1941, for his second two-year term, Lieutenant Governor, Oscar W. Hagen, Secretary of State, Herman Thorson; Attorney General, Alvin C. Strutz; State Treasurer, Carl Anderson; State Auditor, Berta Baker. Chief Justice of the North Dakota Supreme Court is A. G. Burr; there are four associate members elected by popular vote for 10-year terms. See CONSUMERS' COOPERATIVES.

NORTH EAST NEW GUINEA. See AUSTRALIA under *Overseas Territories*.

NORTHERN RHODESIA. See RHODESIA, *NORTHERN*.

NORTHERN TERRITORY. See AUSTRALIA under *Area and Population*.

NORTHWEST TERRITORIES. The northern areas of Canada, extending north from the provinces and the Yukon to the North Pole. It is divided, for administrative purposes, into the districts of Franklin (554,032 sq. mi.), Keewatin (228,160 sq. mi.), and Mackenzie (527,490 sq. mi.). Area, 1,309,682 square miles. Population (1941 census), 10,661. Mining and fur trapping are the chief occupations of the inhabitants. In 1941 there were over 8,000 reindeer in the territories. Mineral production (1939) was valued at \$3,248,777 (radium and uranium products \$1,121,553, gold \$1,876,224, sil-

ver \$195,911). Gold production from the Yellowknife district during 1940 amounted to 54,869 oz. worth \$2,112,456. The Yellowknife district, 1,300 inhabitants, had its first year of municipal government in 1940, under an administrative board of 5 members. Fur output (1938-39): 514,894 pelts valued at \$1,274,817. A territorial council consisting of a commissioner, a deputy commissioner, and 5 councilors governs the territories. Commissioner, Charles Camsell; Deputy Commissioner, Roy A. Gibson.

NORWAY. A European kingdom occupying the western and northern part of the Scandinavian peninsula; occupied by Germany in 1940. The kingdom's sovereignty included Svalbard (Spitsbergen and adjacent islands) in the Arctic Sea, 240 miles distant from the Norwegian coast (see SVALBARD); also Norway asserted sovereignty over Jan Mayen Island in the Arctic Sea, unhabited, and certain uninhabited areas in the Antarctic region. Capital, Oslo.

Area and Population. Covering an area of 124,587 square miles (land area, 119,148 square miles), Norway proper had 2,937,000 inhabitants in December, 1939, by official estimate, by latest census, 2,814,194 in 1930. Only 28 per cent of the population of 1930 were classed as urban, and females exceeded males by about 71,000. The birth rate, per 1,000, was 16.3 for 1940 (15.9 for 1939); death rate, 10.7 (10.2). Populations (1930) of chief cities: Oslo, 253,124; Bergen, 98,303; Trondheim (Nidaros), 54,458; Stavanger, 46,780.

Education and Religion. School is compulsory for the young and literacy is virtually universal. In the academic year 1936-37, public elementary schools numbered 5,751; their pupils, 357,793; support for these schools amounted to 64,331,000 kroner, of which the state paid 27,572,000 and local sources the remainder. Secondary schools numbered 149 (including 42 private schools); their pupils, 25,357. The University of Oslo provided higher education; it had 4,229 students in 1939.

The Evangelical Lutheran Church, under the monarchy, was politically established. All religions were tolerated (but not the Jesuit order). Apart from Evangelical Lutherans, persons reporting religious affiliation in 1930 numbered 91,459: among them, 12,207 Methodists, 7,788 Baptists, 3,325 Adventists, and 2,827 Roman Catholics.

Production. In normal times 29 per cent of the workers followed agriculture or forestry, 27 industry, 10 commerce, 9 transportation, 7 fishing and whaling, 5 professions and public administration. Production of the chief crops in 1940, with 1939 figures in parentheses, was (in metric tons): Wheat, 70,700 (77,800); barley, 91,400 (103,500), rye, 5,700 (6,200); oats, 161,200 (200,800); potatoes, 38,144,000 in 1939. The fish catch for 1940 was reported at 1,070,000 metric tons (1,030,000 in 1939). The value of ore production in 1939 was 56,500,000 kroner, with pyrites and iron ore accounting for 81 per cent of the total. Estimated mineral and metallurgical production in 1940 was (in metric tons): Iron ore, 1,500,000; pig iron, 175,000; tungsten, 20; nickel, 1,250; copper, 20,000; zinc, 5,000; lead, 320; aluminum, 15,000; molybdenum, 600. Shipping revenues normally provide an important part of the kingdom's revenues. The merchant fleet's earnings in 1939 were estimated at about 800,000,000 kroner. As of Mar. 1, 1941, there were about 900 ships of 3,600,000 gross tons under the Norwegian flag.

Foreign Trade. Merchandise imports in 1940 were valued at 944,400,000 kroner (1,366,800,000 in 1939), while merchandise exports totaled 612,000,000 kroner (807,600,000 in 1939). After the Ger-

man invasion, trade was entirely with Germany and German-occupied countries except for a small trade with Sweden and Finland.

Finance. For the fiscal year ended June 30, 1941, proposed budget revenues and expenditures balanced at 790,256,000 kroner as against 624,631,000 kroner (voted budget) for 1939-40. Public debt on June 30, 1939, 1,528,400,000 kroner (foreign, 596,400,000). At the official exchange rate fixed Aug. 29, 1939, the krone was equivalent to \$0.2286.

Transportation. Prior to the German occupation, Norway had about 2,500 miles of railway lines in operation, practically all of which were state-owned. Another line, Grong to Mosjoen (122 miles), was opened after the occupation. Paved highways, totaling 25,699 miles in 1939, were extended by the Germans. An all-weather express highway from Oslo to Bergen was completed early in 1941, and other important roads including one from Trondheim northward to Narvik, were under construction. The Norwegian civil airways were linked with the German European network following the military occupation. The merchant marine, fourth largest in the world, was for the most part operated by Norwegian seamen under British charter or supervision during 1941 (see *Production* above).

Government. Under the Constitution of 1814, as subsequently amended, executive power is vested in the King, acting through a Cabinet responsible to the Storting (parliament). The Storting consisted of 150 members elected for four years by universal suffrage. It divided itself into two sections of 88 and 114 members, called the Lagting and Odelsting, respectively. The composition of the Storting elected in October, 1936, was: Labor, 70; Conservatives, 36; Liberals, 23; Agrarians, 18, others, 3. The elections scheduled for 1940 were not held because of the German invasion of Norway on Apr. 9, 1940. King in 1941, Haakon VII, who was born in 1872 and was elected to the throne by the Storting Nov. 18, 1905.

Upon the German invasion, the King, Government, and Storting withdrew from Oslo to the town of Hamar where the Storting and King unanimously rejected the proffered resignation of the Labor Government headed by Premier Johan Nygaardsvold (appointed Mar. 20, 1935) and voted it full powers to negotiate with the Germans. Later that day (Apr. 9, 1940) the Storting disbanded. Rejecting the German peace terms, the King and the Nygaardsvold Government were driven out of Norway and on June 10, 1940, established themselves in London. At the same time the Government was reorganized to include representatives of all the established political parties except Maj. Vidkun Quisling's National Union (Nazi) party, which had cooperated with the German invaders. Members of the reorganized Government-in-Exile were: Premier, Johan Nygaardsvold; Foreign Affairs, Trygve Lie; Finance, Oscar Torp; Social Welfare, Sverre Støstad; Justice, Terje Wold; Ecclesiastical Affairs and Education, Nils Hjeltnet; Commerce, Anders Frihagen; Public Works, O. Hindahl; Defense, Birger Ljungberg; Ministers without Portfolio, A. Sundt, Sven Nielsen, Anders Fjelstad, J. L. Mowinkel.

On Apr. 9, 1940, Major Quisling proclaimed himself head of a pro-German regime in Oslo. On April 15 the German military commander replaced the "Quisling Government" with an administrative council headed by Ingolf Elser Christensen, governor of Oslo Province. The Christensen Council was abolished, April 24, and Josef Terboven, a German Nazi, was appointed Reich Commissioner for Norway by Reichsfuehrer Hitler with full governing

powers. On Sept. 25, 1940, Herr Terboven appointed a State Council (Statsraad) of 13 Norwegian Nazis or sympathizers, and a legislature (Riksting) to take over the functions of the Storting. On the same day Terboven decreed the abolition of the monarchy and Storting, the dismissal of the Nygaardsvold Government, and the dissolution of all political parties except Quisling's National Union (Nasjonal Samling), which in the 1936 elections had failed to win any seats in the Storting. Quisling was subsequently appointed chairman of the State Council. With the aid of Quisling's supporters, Commissioner Terboven undertook to Nazify all aspects of Norwegian life. His decrees for the reorganization of the judicial system led all members of the Supreme Court to resign in a body on Dec. 23, 1940. For developments in 1941, see below under *History*.

HISTORY

The Government-in-Exile. Norway's stubborn fight against German domination and German-inspired Nazification continued with growing effectiveness at home and abroad during 1941. In London, King Haakon and the Nygaardsvold Government made marked progress in organizing and training Norwegian military and air forces, both in Great Britain and Canada. The Norwegian merchant fleet of some 900 vessels, manned by 30,000 sailors, rendered invaluable aid to the Allied cause in helping to keep Britain supplied. Airmen trained in Canada reached Britain in considerable numbers during 1941 and under the command of Capt. Hjalmar Riiser-Larsen joined in the Allied air operations (see *WORLD WAR*). Norwegian marines participated in repeated raids on isolated German garrisons and supply points along the Norwegian coast. In the British-Norwegian raid of March 4 on the Lofoten Islands off Narvik 215 Germans and 10 Quisling supporters were captured, 10 German ships were sunk, six cod-liver oil and fish factories were destroyed, and more than 300 young Norwegian patriots were recruited in a few hours time for service with the Norwegian forces in Britain.

The Norwegian and British Foreign Ministers on May 28, 1941, signed an agreement covering the organization and employment of Norwegian armed forces in the United Kingdom. The two governments affirmed their determination to prosecute the war to a successful conclusion. Both agreed to reestablish the freedom and independence of the Kingdom of Norway through its complete liberation from German domination. Britain thus undertook to help in ousting not only German forces of occupation in Norway but also every form of German rule by puppet governments. This accord was reinforced on June 12 when Premier Nygaardsvold joined with representatives of 13 other Allied Governments in London in signing an agreement to continue the war "against German or Italian aggression until victory has been won." The Norwegian Government likewise joined the other Allies on September 24 in approving the Atlantic Declaration (q.v.) and a postwar rehabilitation program (see *GREAT BRITAIN* under *History*). With the approval of the British Government, Norwegian maritime courts were established in British ports in November to assume jurisdiction over offenses committed on Norwegian ships.

Following the outbreak of the Russo-German war, King Haakon in a radio broadcast to Norway on July 10 urged his countrymen not to let their close relations with Finland soften their resistance to German rule. He declared that Norwegians assisting Germany and Finland to fight Russia were helping to fasten the German yoke upon Norway.

Only a few hundred Norwegian Nazis were reported to have responded to the German appeal for volunteers to serve on the Russian front. Normal diplomatic relations between the Norwegian Government-in-Exile and Russia were resumed August 5. A German prize court, in approving confiscation of seven Norwegian whaling vessels, held in October that "a state of war still exists between Germany and Norway."

Temporary reshuffling of the Cabinet was announced December 2 to permit Col. Birger Ljungberg, Minister of Defense, to assume "special duties." On December 5 the Government-in-Exile called to the colors Norwegian subjects in all parts of the world who were fit for military service.

Resistance in Norway. The great mass of the Norwegian people joined in this struggle for national liberation with mounting fervor as the significance of German domination and the meaning of the Nazi revolution was brought home to them by increasingly violent methods of repression. There was an extension of espionage on behalf of Britain (see *YEAR BOOK* for 1940, p. 567). Passive resistance to the Germans and sabotage of their military and political measures became more widespread and effective. But the fullest measure of hatred and violent opposition was reserved for Maj. Vidkun Quisling and his pro-Nazi Norwegian supporters, who in the fall of 1940 had undertaken to Nazify Norway through the methods of force and terrorism employed by Hitler's National Socialist party in Germany.

By the beginning of 1941 opposition to Quisling and his administration had become so violent, particularly in Western Norway, that Reich Commissioner Terboven on January 11 ordered the German police to protect the Quislingists and help them in crushing all opposition. In return for this favor, Quisling on January 13 undertook to recruit a regiment of Norwegians to aid Germany in "the German-Norwegian fight against Britain." Enlistments were slow, except among Quisling's Storm Troopers (*hirdmannen*) who were harassed and ostracized by their anti-Nazi countrymen. At the same time anti-German sabotage became more troublesome. German military authorities levied heavy fines on Trondheim and other towns in January for the repeated cutting of cables and telephone lines used by the occupationary forces.

To cope with this situation, a new state police was established late in January under Col. Konrad Sundlo, who as commander of the Narvik garrison betrayed that port to the Germans on Apr. 9, 1940. Immediately afterward Heinrich Himmler, chief of the German secret police (Gestapo), made a tour of inspection in Norway and reportedly advised Quisling as to the best methods for breaking the opposition.

Lutheran Bishops Protest. Further brutal attacks by Quisling's Storm Troopers on school children and other anti-Nazi groups brought a firm protest on February 1 from all seven of Norway's Lutheran bishops. In a letter to Prof. Ragnor Shanke, Quisling's Councilor for Education and Religion, the bishops asked how Commissioner Terboven's promises to respect the independence of the courts and the church could be reconciled with the "systematic violence" of Quisling's Storm Troopers, the resignation of the members of the Supreme Court, and "interference with preachers' sworn secrecy."

The bishops' demand for "clarification" of the regime's intentions was answered indirectly on February 11. Quisling's new appointees to the Supreme Court unanimously reversed the stand taken by their predecessors and ruled that no Norwegian court was competent to pass upon the decrees of the Ger-

man Commissioner. They also held that the Supreme Court could not legally review decrees issued by the Quisling administration with Commissioner Terboven's approval.

Meanwhile the bishops' circular letter was read to many congregations by their pastors in defiance of Professor Shanke's formal prohibition. On February 15 the authorities ordered policemen, supported by Norwegian Nazis, to attend all church services and report violations of the order banning prayers for the royal family, the Government-in-Exile, or the Storting. Some pastors openly defied the order and at most churches the bishops' letter was distributed in leaflet form. A number of prominent pastors joined the growing list of patriots confined in three large concentration camps.

Growth of Violence. Despite the protection afforded the Quisling Storm Troops by the German and Norwegian police and by some thousands of German Gestapo agents, the opposition became steadily more violent. Raids on opposition meetings and arrests of hundreds of anti-Nazis failed to end the frequent street battles between Quislingists and patriots. On February 9 the Swedish press reported the lynching of a prominent young Norwegian Nazi by angry patriots. The Storm Troopers ventured upon the streets of some cities and towns only in groups. After Quisling adherents were jeered and beaten in classrooms, the administration stationed Storm Troopers and police in the schools to enforce acceptance of the "new order."

A German military court at Bergen sentenced three Norwegians to death for pro-British espionage on February 1 and 10 more were condemned to death on February 24. (The executions were postponed by order of Chancellor Hitler on July 6.) Many long prison sentences were imposed, including terms of from one to two years for listening to London and United States radio broadcasts. Yet sabotage and espionage continued. In mid-February a German military train was wrecked and other extensive damage done to the Bergen-Oslo railway. Severe reprisals, including one execution, were taken against the people of the Lofoten Islands for welcoming the British-Norwegian raiding party in March and for sending most of their young men to join the Norwegian forces in Britain. Nevertheless the Lofoten raid was reported to have heartened the Norwegian patriots and spurred their anti-German and anti-Nazi activities.

In view of Norway's refusal to accept collaboration with the Reich, the German military authorities informed Major Quisling in February, according to the Swedish press, that the German promise of independence for Norway following a German victory over Britain could no longer be kept. To avoid clashes with Norwegian patriots, special restaurants for Germans were opened in Oslo and other centers in March. The dismissal and arrest of the head of the Farmers' Association for refusal to cooperate with the Nazis was reported March 15. On March 16 Norwegian ports were closed to visitors without special permits from German authorities. Thousands of patriots remained indoors on April 9, anniversary of the German invasion, in honor of those who fell in the fight against the invaders.

When heavy fines on offending communities and the posting of guards failed to end sabotage of telephone wires and cables, the Germans early in May seized five leading citizens of Stavanger and Hauge-sund as hostages. But sabotage continued, particularly in industrial plants working on German military orders. One of Norway's largest sulphur factories was destroyed by an explosion and fire immediately afterward.

The Physicians' Strike. Meanwhile a new wave of protest was provoked by the kidnapping by Quisling's Storm Troops on April 25 of Dr. Roly Gjissing, chief sick warden of Oslo's lunatic asylum, who defied an order dismissing him to make way for a Quislingite. Some 2,000 Oslo physicians and other medical personnel threatened to stop work unless Dr. Gjissing was released. They demanded that medical appointments should continue to be made on the basis of professional, rather than political, qualifications. This incident was followed by a formal protest by 43 organizations, representing all classes and professions, to the German Commissioner. They censured the German and Quisling authorities for the violence and brutality of Storm Troopers, for hundreds of arrests and imprisonments, and for the destruction of law and order.

Germans Curb Quisling. The authorities forbade all indoor and outdoor celebrations and manifestations on May 17, the 127th anniversary of the Norwegian Constitution. About the same time German and Norwegian Nazi sources estimated the membership of Quisling's National Union movement at from 30,000 to 40,000, or less than 1 per cent of the Norwegian population. Quisling's failure to win over any appreciable part of the people led Commissioner Terboven on May 21 to issue decrees broadening the powers of the German occupational authorities at the expense of the Quisling administration. The German Gestapo chief, Himmler, made a second visit to Oslo and with him arrived many additional German police agents and civil servants. On May 22 the German authorities requested Quisling to return 500,000 kroner of Norwegian state funds that had been appropriated for the use of his party organization and its leaders. Hurrying to Berlin, the Nazi leader succeeded in regaining some of his lost authority.

German Military Activities. Immediately before and after the German attack upon the Soviet Union, greatly increased military activity was reported from Norway. It was announced June 7 that the Germans had removed part of the population of Trondheim to permit construction of a large naval and submarine base. A week later dispatches from Norway reported the mining of the entire Norwegian coast, the prohibition of all sailings to and from Stavanger, the confiscation of 300 farms west of Kristiansand for a great new air base, and the confiscation of numerous Norwegian ships. Heavy German reinforcements were sent to the west-coast garrisons and on June 27 it was announced that Bergen and adjacent territories were closed areas.

German difficulties in Russia were soon brought home to the Norwegian people through an influx of thousands of wounded German soldiers and the replacement of first-line German troops in Norway by second- and third-line troops. Moreover Commissioner Terboven in September ordered all Norwegians to turn over their woolen blankets to the German authorities for use of the German armies in Russia. On October 19 he directed Norwegians, except those in the Narvik district, to turn over all tents, skiing apparel and winter clothing to the German army, on penalty of three years' imprisonment for disobedience.

Marital Law Declared. The Russo-German conflict spurred Norway's resistance to German rule, particularly among Norwegian trade unionists. In June a number of leaders of the National Federation of Labor and various professional groups were arrested for anti-Nazi activity. In mid-July, all but three of the 18 Provincial Governors reportedly resigned in protest against Quisling's control of the civil service. Individual acts of resistance continued to in-

crease. The Germans, fearing a British invasion of Norway and a simultaneous rising of the population, rushed to completion a line of fortifications along the western coast from Kristiansand to Agdenes. All church bells were ordered confiscated in August. Early in July the labor unions served a virtual ultimatum on Commissioner Terboven demanding release of imprisoned labor leaders, the removal of Nazi commissars named to supervise the unions, and free negotiations on working conditions. When these demands were rejected, the workers retaliated with more active sabotage and strikes. Strikes in Oslo's iron and shipbuilding industries were ended only when Nazi authorities declared a state of "civilian emergency" in the capital and surrounding districts on September 10.

During the next few days Commissioner Terboven averted a general strike by rounding up several thousand labor leaders and prominent anti-Nazis of all classes. Death sentences were imposed upon Ludvig Byland, president of the Federation of Labor, and four others. More than a thousand labor leaders, university professors, and other anti-Nazis were sentenced to concentration camps. All trade union officials were replaced by Quisling adherents. Funds of the unions were confiscated and the death penalty was ordered for strikers, saboteurs, and those guilty of "slow-downs" in industry. The Germans demanded the surrender of all firearms. Powers of the Elite Guards and Gestapo were extended throughout Norway, and a modified form of martial law was applied to the entire country.

These measures broke the Oslo strikes and curbed street demonstrations, but the underground warfare against the Germans grew more bitter. The Germans and Norwegian Nazis responded with increasingly harsh measures of repression. Thousands of workers were drafted for new jobs in other parts of the country. German exports to Norway were reduced to the barest essentials. On October 4 Terboven announced in an Oslo speech that further German shipments of foodstuffs to Norway would depend entirely upon the attitude of the Norwegian people. He said that they must either accept the "new order" under Major Quisling and consider Germany's enemies their own or face starvation and incorporation into the Reich.

These threats failed to dampen Norwegian resistance. Guerrillas were reported active in the mountains near Trondheim. The Oslo schools were closed in mid-October following anti-Nazi demonstrations by the students. Extensive sabotage was reported in the new German fortifications. Norwegian fishing boats were forbidden to go outside the five-mile limit. There was systematic expulsion of anti-Nazi students and teachers from the schools.

Three Norwegians were executed by a German firing squad in Bergen August 11 for sending military and other information to England. The execution of six more for "assisting enemies" was reported November 3 and the 70,000 vessels of the Norwegian fishing fleet were placed under State control, presumably to check escapes to Britain. Concentration camps multiplied due to constant new arrests, and the prisoners were reportedly subjected to brutal physical assaults. The city of Stavanger was fined 2,000,000 kroner for sabotage of telephone cables and hostility to German troops on December 23. Toward the end of December, 11 Stavanger residents were shot after summary trial, bringing the total of publicly announced executions to 35. The actual number killed for anti-Nazi activities was estimated at 125.

The Economic Situation. With all trade cut off except that with Sweden and Axis-controlled Europe

and with a German army of some 250,000 men to support, the Norwegian people began to feel the pinch of hunger and poverty during the winter of 1940-41. In mid-January 17 prominent Norwegians cabled an appeal to the United States for food or for funds with which to buy emergency supplies from the Soviet Union. The Swedish press reported a month later that 300,000 people in northern Norway were facing famine in some districts, and that in other sections of the country high prices, low wages, and growing unemployment made it difficult to obtain even those products and foodstuffs that were not rationed. Seagulls and crows were widely used for food, and there was a growing shortage of coal, rubber, and many other industrial supplies. Illegal patriot newspapers and leaflets blamed this situation upon the German occupation and the wholesale shipment of Norwegian food stores and other products to the Reich. The Germans ordered delivery of at least 150,000 tons of fresh fish to the Reich during 1941.

With the coming of spring, the food situation apparently improved. More land was placed under food crops. The production of fisheries was expanded. Offshore whaling, previously forbidden, was resumed. Sea weed was harvested in large quantities for use as cattle, pig, and chicken feed. New cellulose-feed factories were opened in which cordwood was processed into a feed pulp for livestock. German sources asserted that systematic utilization of Norway's fish, wood, and water power had made the country very nearly self-sufficient. On April 9 a trade and clearing agreement with Sweden was concluded under which Norway received 10,000 metric tons of grain, large quantities of canned pork, sugar, sirup, peas, and beans, and iron, steel, and machinery from Sweden in return for fish, nitrate fertilizers, and ores. A somewhat similar trade pact with Finland was announced April 10. Various unemployment relief projects were undertaken with the approval of the German Commissioner.

See GREAT BRITAIN and SWEDEN, under *History*; BIRTH CONTROL; LABOR CONDITIONS, LEND-LEASE ADMINISTRATION; NAVAL PROGRESS, SOCIALISM.

NORWEGIAN LITERATURE. The year 1941 was not conducive to Norwegian literary production, it may prove to be the most meager year since Norway won her independence in 1814. Few literatures have been freer or more individualistic in their expression than the Norwegian, and this tradition is not easily abandoned. At a time when one subject—the war and its consequences for Norway—overshadowed all else in the minds of her people, this was the one subject on which no writer could unburden his heart without dire personal consequences.

Two of Norway's best known younger writers, Ronald Fangen and Arnulf Øverland, were imprisoned by the German authorities. Three others were in voluntary exile, Helge Krog in Sweden, Nordahl Grieg in England, and Sigrid Undset in the United States. Only Knut Hamsun was known to have publicly welcomed the "New Order"; this action was not surprising in view of his pronounced anti-democratic views over a lifetime. Norway's leading historian of literature, Prof. Francis Bull, was in a concentration camp, while his collaborator on the monumental five-volume history of Norwegian literature, Fredrik Paasche, had fled to Sweden. Bull's two collaborators on the Centennial Edition of Ibsen's Works were Didrik Arup Seip, Rector of the University of Oslo, who also was in custody, and Halvdan Koht, recently resigned Foreign Minister in the Norwegian govern-

ment in London, who was living in retirement in Washington, D.C.

Those leaders who were not thus apprehended or driven out struggled on in spite of censorship and terrorism to maintain some semblance of intellectual life. One of the last rallying points of the intelligentsia seems to have been such periodicals as *Samtiden* (edited by Prof. A. H. Winsnes after the departure of Professor Worm-Mueller for England), *Kirke og Kultur*, and *Syn og Segn*. Although no openly subversive material could appear, a number of the articles and poems in these magazines were subtly contemporary in spirit. An article quoting Fichte's *Reden an die deutsche Nation* in *Kirke og Kultur* brought Ronald Fangen the honor of Nazi detention. None of the issues after August had reached this country by the end of 1941. It is not known whether this was due to postal conditions or to actual suspension of publication. Thanks to these magazines it is possible to give the following scanty account of what literature had appeared by that time, which is before the opening of the usual book publishing season.

Characteristic of both the periodicals and the books is an intense preoccupation with the Norwegian national tradition, a search into the treasures of the national past for values that may hold in the present. To this end Rolv Thesen published an anthology of national poetry under a title chosen from the national anthem, *Ja vi elsker* (*Yes, we love*) Gyldendal Publishing House issued *Norges Nasjonal-Litteratur*, a twelve-volume reprint of Norwegian classics from the Poetic Edda to Ibsen and Bjørnson. The travel accounts of the great explorer and statesman, Fridtjof Nansen, appeared in five volumes, as did the collected works of the late Oskar Braaten in six. *Norrøn Livskunst* (*The Norse Art of Life*) by Torsten Høverstad, essays on life and education; *Indtil 1910* (*Until 1910*) by Benjamin Vogt, memoirs from his work as ambassador to England; *Fangstfolk* (*Fishing Folk*) by Gutorm Gjessing, essays on Norwegian prehistory—all of these could be called national without being offensively contemporary.

Original literary works were few. Arthur Omre brought out a new novel, *Harmoni* (*Harmony*), in praise of the simple, natural laboring life. A collection of poems by the youthful Einar Skjæraasen entitled *Den underlige våren* (*That strange spring*) reflected some of the emotions of 1940 and was declared by the eminent critic Einar Skavlan to hold great promise. A contest for good amateur plays produced *Viking Fredlaus* (*Viking Outlaw*) by Birger Jåstad, a period piece, and two others, *Stadion* (*Stadium*) by Leif Halse, and *Nybrot* (*Pioneering*) by Karl Øvretvert. A versified retelling of Aesop's fables by Herman Wildenvey displeased the Nazis by some pointed allusions, but it did not suffer the fate of several other books, which were either suppressed or not permitted to be advertised and reviewed.

The real feelings of the Norwegian people found a better expression in two volumes published in the still free Sweden. *Nordens Stamma* (*The Voice of the North*) was an anthology of Scandinavian writing which expressed the best in the traditions of each nation and their hope of some day again blending their voices in a common chorus; *Norsk Krigslyrikk* (*Norwegian War Lyrics*) contained poems written in 1940 and 1941 by Nordahl Grieg and other Norwegian poets whose personal safety still requires them to remain anonymous. The poems range from passionate invective to a quiet assurance that right will prevail and the beloved land return to its rightful heirs. Some of them

strike a deep note and will undoubtedly join the classics of the nation in days to come.

EINAR HAUGEN.

NOTABLE PERSONS. See CHRONOLOGY; NECROLOGY.

NOVA SCOTIA. A maritime province of eastern Canada. Area, 21,068 square miles. Population (1941 census), 573,190. Vital statistics (1940): 12,755 living births, 6,166 deaths, 6,391 marriages. Chief cities (1941 census figures): Halifax, capital (69,326), Sydney (28,081), Glace Bay (25,050), Dartmouth (10,919), Truro (10,410), New Waterford (9,237), New Glasgow (9,118), Sydney Mines (8,157), Amherst (8,481), Yarmouth (7,699), Springhill (7,123). Education (1938-39): 151,466 students enrolled in schools and colleges.

Production. The gross value of agricultural production for 1940 was \$29,810,000 (field crops \$13,347,000, dairy products \$7,588,000, fruits and vegetables \$3,506,000, farm animals \$3,265,000, poultry products \$1,606,000). Oats 3,094,000 bu. (3,265,000 in 1940), potatoes 104,550 tons (115,650), roots 165,000 tons (175,550), hay and clover 667,000 (649,000) were the chief field crops in 1941. Apple crop (1940): 1,151,000 bbl. worth \$2,106,300. Livestock (1940): 229,200 cattle, 143,500 sheep, 52,800 hogs, 43,900 horses, 1,335,800 poultry. Fur output (1938-39): 150,865 pelts worth \$601,752. Value of products of the forests (1939): \$8,020,000. Fisheries catch (1940): 141,450 tons valued at \$9,843,000 (cod \$3,694,000, lobsters \$1,785,000, haddock \$1,399,600, mackerel \$493,200).

Mineral production (1939) was valued at \$30,746,200 (see YEAR BOOK for 1940, p. 568). Manufacturing (1939): 1,083 factories, 17,627 employees, \$35,885,563 net value of products.

Government. Finance (year ended Nov. 30, 1940): \$16,443,946 for revenue; \$15,497,608 for expenditure; net funded debt, \$96,467,281. The executive authority is vested in a lieutenant governor who is advised by a ministry of the house of assembly, the latter comprising 30 members elected for a five-year term by popular vote (23 Liberals, 4 Conservatives, and 3 Cooperative Commonwealth Federationists were elected at the provincial general election of Oct. 23, 1941). Ten senators and 12 elected commoners represent Nova Scotia in the Federal parliament at Ottawa. Lieutenant Governor, F. F. Mathers (appointed May 31, 1940); Premier, A. S. MacMillan (Liberal; appointed July 10, 1940). See CANADA.

NURSERY SCHOOLS. Compare KINDERGARTENS.

NURSING, NURSE TRAINING. See PUBLIC HEALTH SERVICE; RED CROSS; SCHOOLS.

NUT CROPS. See HORTICULTURE.

NUTRITION. See AGRICULTURE, U.S. DEPARTMENT OF; PUBLIC HEALTH SERVICE. For the **NUTRITION ADVISORY COMMITTEE AND NUTRITION DIVISION**, see DEFENSE HEALTH AND WELFARE SERVICES. For **NATIONAL NUTRITION CONFERENCE**, see PUBLIC HEALTH SERVICE.

NYA. See NATIONAL YOUTH ADMINISTRATION.

NYASALAND. A British East African protectorate. Land area, 37,374 square miles; population (1939), 1,679,977, including 1,676,382 natives, 1,847 Europeans, and 1,748 Asiatics. Chief towns: Zomba (capital), Blantyre, Limbe, Cholo, and Lilongwe. Education (1939): 4 elementary schools for European children; 4,327 native schools and 208,451 students.

Production and Trade. Chief products (figures are

for 1940 exports)—tobacco (13,394,011 lb.), tea (12,794,314 lb.), cotton (2,653,254 lb.), maize, coffee, rubber, rice, sisal, and tung oil. Livestock (1939): 238,818 goats, 216,137 cattle, 61,169 swine, and 45,685 sheep. Trade (1940): £837,561 for imports and £1,026,326 for exports (tobacco £482,166, tea £481,688, cotton £38,693). Roads (1940): 3,427 miles.

Government. Finance (1939): £505,802 for revenue and £735,889 for expenditure. Public debt (Dec. 31, 1939), £5,464,959. The government is administered by a governor, assisted by an executive and a legislative council. Governor and Commander-in-Chief, Sir Donald Mackenzie-Kennedy (appointed Feb. 24, 1939).

History. It was announced in the British Parliament on July 30, 1941, that arrangements were being made to establish a secretariat of the existing East African Governors' Conference for the purpose of securing the more effective cooperation of Northern Rhodesia and Nyasaland with Southern Rhodesia in the war effort. At the end of the war these arrangements were to be reviewed. See RHODESIA, SOUTHERN under *History*.

NYLON. See CHEMISTRY, INDUSTRIAL under *Textiles*; TEXTILES.

OATS. The oats crop of 1941 in the United States was estimated by the U. S. Department of Agriculture at 1,176,107,000 bu., about 6 per cent less than the 1940 crop of 1,246,050,000 bu. but 17 per cent larger than the 1930-39 average of 1,007,141,000 bu. The decline in production from 1940 was due to sharply lower yields per acre in the Corn Belt States; the harvested acreage was larger than in 1940 in most of the important producing States. The acreage not harvested for grain, 35 per cent of the acreage planted, compared with 43 per cent in 1940. The harvested acreage of 37,972,000 was about 7 per cent larger than that of 1940 and considerably larger than the 1930-39 average of 36,487,000 acres. Acre yields averaged 31 bu. in 1941 and 35.2 bu. in 1940. Leading oats-producing States were Iowa with 177,280,000 bu., Illinois 154,112,000, Minnesota 116,019,000, Wisconsin 75,669,000, North Dakota 58,575,000, South Dakota 54,912,000, Nebraska 54,280,000, and Indiana 54,120,000 bu. The seasonal average price per bushel (preliminary) received by farmers was 38.7¢ and the estimated value of production was \$455,610,000 in 1941 compared to 30.3¢ and \$377,171,000 in 1940. See crop production tables (pp. 12-13) under AGRICULTURE.

OBITUARIES. See NECROLOGY.

OBSERVATORIES. See ASTRONOMY.

OCCUPATIONAL ACCIDENTS AND DISEASES. Compare INDUSTRIAL HEALTH AND SAFETY.

OCD. See CIVILIAN DEFENSE, OFFICE OF.

OCEANIA. French. See FRENCH OCEANIA.

OCEAN ISLAND. See BRITISH EMPIRE.

ODOR ADSORPTION. See HEATING AND VENTILATING.

OEM. Office for Emergency Management. See NATIONAL DEFENSE AND WAR AGENCIES.

OFF. See FACTS AND FIGURES, OFFICE OF.

OFFICER CANDIDATES SCHOOLS. See MILITARY PROGRESS.

OFFICES, Federal. See the key word of each title, as PRODUCTION MANAGEMENT, OFFICE OF.

OHIO. An east north central State. Area: 41,222 sq. mi., including 100 sq. mi. of inland water, but excluding part of Lake Erie, 3,457 sq. mi. Population: (1940 census) 6,907,612. The urban popula-

tion comprises 66.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 4.9 per cent (U.S. average, 10.2); elderly (65 years and over), 7.7 per cent. Ohio ranks 35th among the States in area, fourth in population, and eighth in density, with an average of 168.0 persons per square mile. The capital is Columbus with 306,087 inhabitants; largest city, Cleveland, 878,336. There are 88 counties and 59 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Kenneth C. Ray, Director of the Department of Education, there were 1,200,769 pupils enrolled in the public schools of Ohio during the school year 1940-41, 698,453 in elementary schools and 480,838 in secondary schools. Teachers numbered 40,700 and received an annual average salary of approximately \$1,600. Total current expenditures for the 1940 school year were \$107,325,076, exclusive of \$19,597,664 for Capital Outlay, \$8,446,023.47 for Interest, and \$23,857,821 for Debt Retirement in 1939-40.

Transportation. State highway mileage in 1939, including streets under State control, totaled 18,603, of which 18,453 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 1,942,639; 1,728,275 were private and commercial automobiles, and 190,654 trucks and tractor trucks. Gross motor-fuel consumption was 1,473,856,000 gallons. Net motor-fuel tax receipts were \$50,789,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$30,376,000.

Railways of all classes extended 8,508 miles (Dec. 31, 1939) 3.62 per cent of the total mileage in the United States. Class I steam railways (3,569 miles) reported 55,900,751 tons of revenue freight originating in Ohio in 1940 and 131,157,206 tons terminating in Ohio. There are 109 airports and landing fields in the State (28 lighted fields) and 10 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 1,196 civil aircraft in the State and 3,577 airline transport, commercial, and private pilots (3,014 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 9,893,900, as compared with 9,790,700 acres in 1940. According to the latest census, there are 233,783 farms, valued at \$1,443,917,176, averaging 93.7 acres each. Farm population was 1,083,619 or 15.7 per cent of the total. Leading crops with production in 1941 were: Corn, \$114,292,000, 160,974,000 bu.; wheat, \$51,427,000, 48,978,000 bu.; hay, \$30,610,000, 3,329,000 tons; oats, \$22,091,000, 51,374,000 bu.; soybeans, \$19,057,000, 13,143,000 bu.; potatoes, \$8,810,000, 10,614,000 bu.; commercial truck crops, \$7,049,000; apples, \$5,651,000, 7,064,000 bu.

Manufacturing. The total value of manufactured products, according to the latest census (for the year 1939) was \$4,584,665,659. For details, see 1940 YEAR BOOK.

Mineral Production. Leading products in 1939 in order of value were (with 1940 production in parentheses): Pig iron, 8,119,073 net tons valued at \$147,154,864 (10,275,696 net tons, \$193,283,920); coal, 19,632,000 short tons, \$32,196,000 (22,092,000 net tons); coke, 6,135,949 short tons, \$28,502,924 (7,897,929 net tons); clay products other than pottery and refractories, \$26,539,916; natural gas, 36,469,000 M cubic feet, \$18,818,000; stone, 11,133,560 short tons, \$10,140,272 (11,915,520 short tons, \$10,234,221); lime, 1,106,250 short tons,

\$8,907,195 (1,284,877 short tons, \$10,180,785); cement, 6,140,125 barrels, \$8,233,817 (6,841,129 barrels, \$9,202,414); sand and gravel, 8,660,485 short tons, \$6,595,483 (9,558,904 short tons, \$7,182,453); ferro-alloys, 143,682 long tons, \$6,084,252. The total value of mineral production in 1939, according to the U.S. Bureau of Mines, was 119,750,853. (Pig iron and coke are eliminated in State totals to avoid duplication.) Ohio ranks ninth among the States in mineral production with 2.83 per cent of the total value for the United States.

Trade. According to the 1940 census there were 9,588 wholesale establishments in Ohio, employing 75,975 persons, reporting net sales for 1939 of \$2,630,784,000 and annual pay roll of \$132,425,000. There were 93,041 retail stores with 270,425 employees, reporting sales of \$2,441,293,000 and pay roll of \$271,073,000. Service establishments numbered 34,174, employing 50,574 persons for \$52,174,000 per year, and reporting a business volume amounting to \$175,094,000. The leading business center of the State is Cleveland which reported wholesale sales of \$946,653,000, retail sales of \$420,426,000, and \$43,469,000 receipts for its service establishments. Cincinnati reported sales of \$647,187,000 wholesale and \$230,446,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Ohio was \$160,875,000. Under the Social Security program, financed by Federal funds matching State grants, 137,871 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$23.34 (U.S. average pension, \$21.08); 31,730 dependent children in 11,820 families received average monthly payments of \$39.36 per family (U.S. average, \$32.73); and 3,998 blind persons received \$20.11 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 47,980 and received \$16.30 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 5,987 (\$397,000); NYA student work program, 19,399 (\$140,000); NYA out-of-school work program, 23,440 (\$492,000); WPA, 80,670 (\$4,548,000); other Federal emergency projects, 583 (\$91,000); regular Federal construction projects, 25,816 (\$3,835,000). The Farm Security Administration certified subsistence payments totaling \$14,000 for the month to 482 cases.

Legislation. The General Assembly convenes in regular session on the first Monday of January in odd years. It is composed of 36 Senators (19 Republicans and 17 Democrats in 1941) and 138 Representatives (78 Republicans and 60 Democrats).

The 94th General Assembly, in session January 6 to May 27, 1941, enacted into law 232 measures out of 1,046 bills introduced in both Senate and House, and adopted 13 out of 77 joint resolutions offered; six other laws were vetoed. The legislative program advocated by Gov. John W. Bricker, which called for a balanced budget, a welfare and university building program, and a number of important code revisions, was enacted in the main, despite the exceedingly slim majority held by the Republican party and some division within its ranks over controversial measures. Appropriations totaled \$352,924,819. The main features of the program enacted were summarized as follows by John P. Biehn in the Columbus *Dispatch*, May 18, 1941:

Extension of the liquid fuel tax for two years.
Extension of the cigaret tax for two years.

Appropriation of \$12,000,000 a year for local governments to be paid from sales tax revenues

Creation of the Ohio state guard to serve during the absence in federal service of the Ohio national guard.

Increase of the uniformed division of the state highway patrol from 200 to 800 men and increase of the powers of the patrolmen.

Removal of the requirement for federal recognition in the appointment of an adjutant general

Creation of state and local defense councils appointed by the governor to cooperate in national defense

Liberalization of benefits and reduction of payroll taxes under the unemployment compensation act

Recodification and extension of the mine safety laws of the state.

Increased benefits under the workmen's compensation act to provide maximum death awards of \$7,000 instead of \$6,500 and weekly compensation at a maximum of \$21 instead of \$18.75

Financing of an increase in old age pension to a maximum of \$40 a month

Appropriation of \$6,500,000 of current revenue for a state welfare and state-supported university building programs.

Payment of \$6,000,000 during the 1941-42 biennium on the remaining \$12,000,000 state school deficit.

Finances. Total tax collections in Ohio for the fiscal year ending in December, 1940, were \$265,327,000. Total sales taxes amounted to \$138,869,000, including motor-fuel, \$51,428,000, general sales, \$50,985,000. Taxes on specific businesses ran to \$27,335,000, general and selective property, \$6,775,000, unemployment compensation, \$58,574,000.

Cost payments for the operation of general government totaled \$207,621,000 in 1939, the latest year available. (Revenues for the general government for that year were \$279,231,000.) Cost of operation per capita was \$30.16. Total gross debt outstanding in 1941 was \$10,664,000, as compared with \$9,534,000 in 1932.

Officers and Judiciary. The Governor is John W. Bricker (Rep.), inaugurated in January, 1941, for his second two-year term; Lieutenant Governor, Paul M. Herbert; Secretary of State, John E. Sweeney; Attorney General, Thomas J. Herbert; State Treasurer, Don Ebright; State Auditor, Joseph T. Ferguson. Chief Justice of the Ohio Supreme Court is Carl V. Weygant; there are six associate members elected by popular vote for six-year terms. See CONSUMERS' COOPERATIVES; FIRE PROTECTION; LABOR LEGISLATION; topics listed under CINCINNATI.

OIL. See PETROLEUM. For cottonseed oil, see COTTON.

OKLAHOMA. A west south central State. Area: 69,919 sq. mi., including 636 sq. mi. of inland water. Population: (1940 census) 2,336,434. The urban population comprises 37.6 per cent of the total (U.S. average, 56.5 per cent); non-white population, 9.9 per cent (U.S. average, 10.2); elderly (65 years and over), 6.2 per cent. Oklahoma is 17th among the States in area, 22d in population, and 32d in density, with an average of 33.7 persons per square mile. The largest city and capital is Oklahoma City with 204,424 inhabitants. There are 77 counties and 21 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to A. L. Crable, Superintendent of Public Instruction, there were 611,818 pupils enrolled in the public schools of Oklahoma during the school year 1939-40, 472,227 in elementary schools and 139,591 in secondary schools. Teachers, principals, and superintendents numbered 20,980 and received an annual average salary of \$1,054. Total current expenditures for the year were \$30,523,851.78.

Transportation. State highway mileage in 1939, including streets under State control, totaled 8,607, of which 7,713 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 585,052; 467,099 were private and commercial automobiles, 2,792 busses, and 104,828 trucks and tractor trucks. Gross motor-fuel consumption was 441,161,000 gallons. Net motor-fuel tax receipts were \$15,067,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$6,435,000.

Railways of all classes extended 6,313 miles (Dec. 31, 1939) 2.69 per cent of the total mileage in the United States. Class I steam railways (5,676 miles) reported 10,517,856 tons of revenue freight originating in Oklahoma in 1940 and 6,755,803 tons terminating in Oklahoma. There are 51 airports and landing fields in the State (18 lighted fields) and two seaplane anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 449 civil aircraft in the State and 2,095 commercial and private pilots (1,739 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 13,419,700, as compared with 13,441,000 acres in 1940. According to the latest census, there are 179,687 farms, valued at \$831,140,748, averaging 193.7 acres each. Farm population numbered 935,241 or 40.0 per cent of the total. Leading crops with production in 1941 were: Cotton lint, \$54,000,000, 750,000 bales; wheat, \$44,235,000, 48,610,000 bu.; corn, \$23,089,000, 31,202,000 bu.; cottonseed, \$14,395,000, 334,000 tons; hay, \$11,122,000, 1,716,000 tons, oats, \$9,583,000, 25,900,000 bu.; grain sorghums, \$7,823,000, 13,260,000 bu.; sweet sorghums, \$7,018,000, 1,210,000 tons.

Manufacturing. The total value of manufactured products, according to the latest census (for the year 1939) was \$312,168,499, 1,606 establishments employed 28,113 wage earners who received \$30,465,185 for the year.

Mineral Production. Leading mineral products in 1939 in order of value were: Petroleum, 174,994,000 bbl. valued at \$209,500,000 (155,952,000 bbl in 1940, unrevised figure); natural gas, 250,875,000 M cu. ft., valued at \$28,103,000; natural gasoline, 436,123,000 gal., \$15,502,000, zinc, 140,379 short tons, \$14,599,416 (162,935 short tons in 1940). The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$236,176,614 or 5.58 per cent of the total for the United States. Oklahoma ranks fifth among the States in the value of mineral production.

Trade. According to the 1940 census there were 3,998 wholesale establishments in Oklahoma, employing 15,559 persons, reporting net sales for 1939 of \$461,519,000 and annual pay roll of \$21,561,000. There were 23,722 retail stores with 59,988 employees, reporting sales of \$513,091,000 and pay roll of \$48,953,000. Service establishments numbered 10,726, employing 13,321 persons for \$9,742,000 per year, and reporting a business volume amounting to \$35,963,000. The leading business center of the State is Oklahoma City which reported wholesale sales of \$193,322,000, retail sales of \$91,844,000, and \$8,850,000 receipts for its service establishments. Tulsa reported sales of \$75,410,000 wholesale and \$67,806,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Oklahoma was \$54,519,000. Under the Social Security program, financed by Federal funds matching State grants, 76,469 elderly persons were receiving (as of June, 1941) an average monthly old-

age pension of \$18.01 (U.S. average pension, \$21.08); 44,879 dependent children in 19,562 families received average monthly payments of \$15.26 per family (U.S. average, \$32.73); and 2,153 blind persons received \$16.41 per month (U.S. average, \$25.58). General relief cases include 4,803 cases aided under program administered by State board of public welfare, and 6,711 cases aided by county commissioners (amount of duplication believed to be large); total payment received was \$50,012.

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 9,016 (\$597,000); NYA student work program, 8,018 (\$60,000); NYA out-of-school work program, 7,831 (\$164,000); WPA, 32,109 (\$1,433,000); other Federal emergency projects, 33 (\$3,000); regular Federal construction projects, 4,277 (\$414,000). The Farm Security Administration certified subsistence payments totaling \$43,000 for the month to 1,594 cases.

Legislation. The Legislature convenes in regular session on Tuesday after the first Monday of January in odd years. It is composed of 44 Senators (42 Democrats and 2 Republicans in 1941) and 120 Representatives (113 Democrats and 7 Republicans). The following summary of 1941 enactments was prepared for the YEAR BOOK by the Oklahoma State Librarian, Ralph Hudson.

The Eighteenth Oklahoma Legislature convened in regular session Jan 7, 1941, and, like the preceding legislature, worked closely with the Governor. Three resolutions submitting constitutional amendments were passed by the Legislature shortly after convening and the amendments were adopted on Mar 11, 1941, at a special election. The first provided that the State Board of Equalization should estimate the revenue of the State and submit this estimate to the Legislature, and it nullified all appropriations in excess of the revenues actually received. In case of a failure of revenue, all appropriations are reduced on a proportionate basis. This amendment stopped the series of deficits that have been incurred by the State in recent years. The second amendment created the Oklahoma State System of Higher Education which is a governing board of all State supported institutions of higher learning. This board prescribes standards, determines functions, grants degrees, and allocates funds to each institution as all appropriations for higher education are made in a lump sum to this board. The third amendment removed the limitation of the amount of financial assistance granted to old age pensioners if sufficient taxes were enacted to pay for any increase.

The right of eminent domain to establish airports was granted to cities and towns and to the United States of America. A system for organizing credit unions was established. A ten year apportionment of members of the House of Representatives was made. A small loan act was passed limiting the interest rate and setting certain fees. Unfair sales or sales below cost were prohibited. The judicial districts of the state were revised. Sabotage and criminal syndicalism were made felonies. The Communist Party was denied recognition and no person can be eligible as a candidate for public office who is a Communist, nor is any person affiliated with the Communist Party eligible for appointment or election to any state office and any such now in office shall be removed.

The Oklahoma Unemployment Security Commission was created to govern employment security service and the State employment service. The establishment of a State guard was authorized. The motor vehicle license and registration act was amended, and a vehicle excise tax was reenacted. All State owned passenger automobiles except those owned by the Department of Public Safety and a limited number that might be retained by the Highway Department were ordered sold and further purchase of similar vehicles was forbidden. Itinerant merchants were placed under a regulatory act. The interstate oil compact was renewed. The State prison farm was ordered sold as well as property of the subprison. A state Dry Cleaners' Board was established with authority to set minimum prices and to supervise this industry in the state.

The Oklahoma Funding Bond Commission was created to fund the last of the State's debts. Property assessment was revised as well as the law pertaining to delinquent taxes. The cigarette tax was reenacted and a tax placed on other forms of tobacco. The gasoline tax was increased one-half cent and an additional one and one-half cents per gallon tax was placed on other special fuels. A gift

tax was levied. The petroleum excise tax and the sales and use taxes were reenacted.

The State Board of Education was reorganized and the last list of text book adoptions was extended. A new compilation of the Oklahoma statutes was authorized and ordered, and a large number of obsolete acts was repealed.

Elections. By a three-to-one vote Oklahoma in March eliminated from her constitution a restriction freezing at \$30 per month the maximum amount of State aid to needy aged persons, and the legislature, or the people by initiative petition, were authorized to fix the maximum amount of aid permissible. Subsequently the State Welfare Commission authorized, if funds are available, monthly payments of \$40 per month. When this policy is implemented, Oklahoma will receive from the Federal Government \$20 monthly for each person aided instead of only \$15.

Finances. Total tax collections in Oklahoma for the fiscal year ending in June, 1941, were \$62,858,000 (1940: \$61,879,000). Total sales taxes amounted to \$32,555,000, including motor fuel, \$15,950,000, general taxes, \$11,788,000. Taxes on specific businesses ran to \$2,278,000, general and selective property, \$42,000, unemployment compensation, \$6,170,000. The net income taxes were \$6,261,000.

Cost payments for the operation of general government totaled \$70,229,000 in 1939, the latest year available. (Revenues for the general government for that year were \$80,532,000.) Cost of operation per capita was \$34.39. Total gross debt outstanding in 1941 was \$43,223,000, as compared with \$11,532,000 in 1932.

Officers and Judiciary. The Governor is Leon C. Phillips (Dem.), inaugurated in January, 1939, for a four-year term; Lieutenant Governor, James E. Berry; Secretary of State, C. C. Childers; State Treasurer, Carl B. Sebring; State Auditor, Frank C. Carter. Chief Justice of the Oklahoma Supreme Court is Earl Welch; there are eight associate members elected by popular vote for six-year terms. See COMMUNISM; DAMS; FLOODS; LABOR LEGISLATION; PLANNING.

OLD-AGE ASSISTANCE, INSURANCE, AND PENSIONS. See LABOR LEGISLATION, RAILWAYS; RELIEF; SOCIAL SECURITY BOARD; articles on States under Social Security and Legislation.

OLYMPICS. With Olympic games obviously out of the question, there was a lot of chatter early in the year about possible Pan-American games to be held in Argentina late in 1942. The fate of these games after the United States entered the War was not known.

OMAN. See ARABIA under *Muscat and Oman*.

ONTARIO. A Canadian province between Quebec and Manitoba. Area, 412,582 square miles, including 49,300 square miles of fresh water. Population (1941 census), 3,756,632. Vital statistics (1940): 68,393 living births, 38,383 deaths, 41,235 marriages. Chief cities (1941 census figures): Toronto, capital (656,930), Hamilton (163,768), Ottawa, capital of Canada (149,881), Windsor (103,961), London (77,043), Kitchener (35,366). Education (1938-39): 787,272 students enrolled in schools and colleges.

Production. The gross value of agricultural production in 1940 was \$363,584,000 (field crops \$140,680,000, dairy products \$98,993,000, farm animals \$63,681,000, poultry products \$24,438,000, fruits and vegetables \$22,195,000, tobacco \$8,598,000, fur farming \$1,114,000). Wheat 17,716,000 bu. (23,400,000 in 1940), oats 76,032,000 bu. (86,554,000), barley 13,202,000 bu. (15,519,000).

mixed grains 32,537,000 bu. (34,770,000), corn for husking 9,471,000 bu. (6,956,000), potatoes 434,700 tons (337,650), roots 906,200 tons (1,076,400), hay 5,337,000 tons (6,916,000), fodder corn 3,540,000 tons (3,112,000), sugar beets 322,200 tons (401,000) were the main field crops in 1941. Apple crop (1940): 783,200 bbl. worth \$1,440,500. Tobacco (1940): 23,365 tons valued at \$8,598,300. Livestock (1940): 2,518,300 cattle (including 1,195,100 milk cows), 1,997,900 hogs, 819,500 sheep, 559,900 horses, 22,901,200 poultry. Fur output (1938-39): 1,038,446 pelts valued at \$2,538,658. Forest production (1939) was worth \$36,100,000. Fisheries catch (1940): 13,981 tons worth (marketed) \$3,035,100.

Mineral production (1939) was valued at \$232,519,948, including gold (3,086,076 fine oz.) \$111,533,873, nickel (226,105,865 lb.) \$50,920,305, copper (328,429,665 lb.) \$32,637,305, platinum (148,877 fine oz.) \$5,221,712, palladium, rhodium, iridium (135,402 fine oz.) \$4,199,622, silver (4,689,422 fine oz.) \$1,898,653, cobalt (732,561 lb.) \$1,213,454, natural gas (11,966,581 M cu. ft.) \$7,261,928, salt (370,843 tons) \$2,220,189. Gold output (1940): 3,261,688 fine oz. Manufacturing (1939): 9,824 factories, 318,871 employees, \$791,428,569 net value of products.

Government. Finance (year ended Mar. 31, 1940): \$98,925,000 for revenue and \$102,159,000 for expenditure. Budget estimates (1941-42): \$115,180,000 for revenue and \$105,437,000 for expenditure. Revised budget estimates (1940-41): \$114,056,000 for revenue and \$101,456,000 for expenditure. Net funded debt (Mar. 31, 1940): \$682,744,454. The executive authority is vested in a lieutenant governor who is advised by a ministry of the legislature. In the legislative assembly there are 90 members elected for a five-year term by popular vote. Twenty-four senators (appointed for life) and 82 elected commoners represent Ontario in the Federal parliament at Ottawa. Lieutenant Governor, Albert Matthews (appointed Nov. 30, 1937); Premier, Mitchell F. Hepburn (Liberal; appointed July 10, 1934). See CANADA.

OPA, OPACS. See PRICE ADMINISTRATION, OFFICE OF. **OPERA.** See MUSIC.

OPINION RESEARCH CENTER, National. An institution established in 1941 by the Marshall Field Foundation, Inc., of New York City, in association with the University of Denver. Its purposes are: (1) To establish the first non-profit, non-commercial organization to measure public opinion in the United States. (Through a national staff of trained investigators, representative cross-sections or samples of the entire population will be personally interviewed on questions of current importance.) (2) To make available to legislators, government departments, academicians, and non-profit organizations a staff of experts in the science of public opinion measurement, and a highly trained nationwide corps of interviewers. (3) To analyze and review the results of surveys made by other polling organizations. (4) To create at the University of Denver a research Center to discover, test and perfect new methods, techniques and devices for ascertaining the status of public opinion. (5) To provide at the University of Denver a graduate department devoted to the study of the new science of public opinion measurement.

The new science of opinion measurement has as its field the accurate measurement of the opinions of the entire population through the use of the sampling technique. By giving the electorate an op-

portunity to express itself in the intervals between elections, opinion polls provide a new means of making voters articulate. The various population groups to be interviewed by the Center parallel the population groups of the nation. All sections of the country, from farm to large city, are represented in their true proportion. The same is true of age groups, sex, economic groups, minority groups, etc. Thus it is seen that selecting a proper cross-section requires statistical skill and a broad sociological knowledge. The Center has selected and trained a corps of interviewers in every section of the country. Questions for national surveys deal with subjects or issues close to the common experience of the masses of the people, or are based on subjects of wide public interest.

Much effort is being devoted to testing and developing new techniques and methods in order to make practical contributions to the science of opinion research. For example, as yet no really successful method of measuring "how strongly" people feel about social and political issues has been discovered. At present the public opinion polls go little farther than the popular referendum in getting at more than the simple acceptance or rejection of a proposal.

The Center intends to be active in the movement for an Audit Bureau of Polls and to analyze the results of published surveys. During the presidential election of 1940 six polls (Crossley, Dunn, Gallup, Hurja, Roper, Wall) were being widely publicized in the press. Some of these were based on the sampling technique, others on less reliable methods. If an advisory council, composed of experts in the field, were to have examined the methods used by these various organizations and to have made public its report, much confusion might have been avoided.

The Director is Harry H. Field; Associate Director, F. Douglas Williams; Statistician, William Salstrom. Directors are Caleb F. Gates, Jr.; Gordon W. Allport; Hadley Cantril; Douglas P. Falconer; J. Quigg Newton, Jr.; Samuel A. Stouffer, and Louis S. Weiss.

OPIUM AND OPIUM BOARD. See NARCOTIC DRUGS CONTROL.

OPM. See PRODUCTION MANAGEMENT, OFFICE OF.

OPTIONAL TAX CHART. See TAXATION.

ORANGE FREE STATE. See SOUTH AFRICA, UNION OF under *Area and Population*.

ORCHESTRAS. See MUSIC; RADIO.

OREGON. A Pacific State. Area: 96,981 sq. mi., including 631 sq. mi. of inland water, but excluding Pacific coastal waters, 48 sq. mi. Population: (1940 census) 1,089,684. The urban population comprises 48.8 per cent of the total (U.S. average, 56.5 per cent); non-white population, 1.3 per cent (U.S. average, 10.2); elderly (65 years and over), 8.5 per cent. Oregon ranks ninth among the States in area, 34th in population, and 38th in density, with an average of 11.3 persons per square mile. The capital is Salem with 30,908 inhabitants; largest city, Portland, 305,394. There are 36 counties and seven cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Rex Putnam, Superintendent of Public Instruction, there were 206,715 pupils enrolled in the public schools of Oregon during the school year 1940-41, 144,792 in elementary schools and 61,923 in secondary schools. Teachers numbered 8,000 and received an annual average

salary of \$1,377.06. Total expenditures for the year were \$21,522,614.58.

Transportation. State highway mileage in 1939, including streets under State control, totaled 7,048, of which 6,687 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 401,328; 325,130 were private and commercial automobiles, 692 busses, and 67,756 trucks and tractor trucks. Gross motor-fuel consumption was 264,672,000 gallons. Net motor-fuel tax receipts were \$11,359,000, the rate being five cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$3,346,000.

Railways of all classes extended 3,406 miles (Dec. 31, 1939) 1.45 per cent of the total mileage in the United States. Class I steam railways (2,759 miles) reported 9,921,763 tons of revenue freight originating in Oregon in 1940 and 8,256,702 tons terminating in Oregon. There are 30 airports and landing fields in the State (14 lighted fields) and three seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 289 civil aircraft in the State and 1,293 airline transport, commercial, and private pilots (1,127 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 2,551,600, as compared with 2,645,700 acres in 1940. According to the latest census, there are 61,829 farms, valued at \$476,817,354, averaging 290.9 acres each. Farm population numbered 259,638 or 23.8 per cent of the total. Leading crops with production in 1941 were: Wheat, \$21,801,000, 23,442,000 bu.; hay, \$15,461,000, 1,917,000 tons, commercial truck crops, \$6,088,000; pears, \$5,401,000, 4,259,000 bu.; potatoes, \$5,381,000, 7,175,000 bu.; hops, \$5,040,000, 16,800,000 lb.

Manufacturing. The total value of manufactured products, according to the latest census (for the year 1939) was \$365,374,436; 2,248 establishments employed 63,622 wage earners who received \$77,585,546 for the year.

Mineral Production. The value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$8,636,440, only one-fifth per cent of the total value for the United States. Chief product is gold, 93,372 troy ounces in 1939 (113,402 troy ounces valued at \$3,969,070 in 1940).

Trade. According to the 1940 census there were 1,934 wholesale establishments in Oregon, employing 15,443 persons, reporting net sales for 1939 of \$441,310,000 and annual pay roll of \$24,630,000. There were 16,458 retail stores with 41,720 employees, reporting sales of \$442,160,000 and pay roll of \$44,154,000. Service establishments numbered 6,256, employing 11,376 persons for \$10,910,000 per year, and reporting a business volume amounting to \$34,203,000. The leading business center of the State is Portland which reported wholesale sales of \$317,326,000, retail sales of \$183,551,000, and \$20,270,000 receipts for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Oregon was \$20,883,000. Under the Social Security program, financed by Federal funds matching State grants, 21,059 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$21.42 (U.S. average pension, \$21.08); 4,887 dependent children in 2,067 families received average monthly payments of \$40.87 per family (U.S. average, \$32.73); and 465 blind persons received \$24.94 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 6,581 and received \$16.45

per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 958 (\$63,000); NYA student work program, 2,984 (\$23,000); NYA out-of-school work program, 3,143 (\$62,000); WPA, 9,096 (\$640,000); other Federal emergency projects, 53 (\$4,000); regular Federal construction projects, 7,859 (\$1,100,000). The Farm Security Administration certified subsistence payments totaling \$9,000 for the month to 564 cases.

Legislation. The Legislative Assembly convenes in regular session on the second Monday of January in odd years. It is composed of 30 Senators (5 Democrats and 25 Republicans in 1941) and 60 Representatives (22 Democrats and 38 Republicans). Most of the enactments of the 1941 Legislature were of relatively minor importance. The following is a brief summary of the more important acts, compiled by Miss Mirpah G. Blair, Acting Librarian of the Oregon State Library.

Provision was made for congressional reapportionment into four districts, when a fourth congressman is allotted to Oregon. Changes in automobile speeds allowed were made, the limit being 55 miles on open highways. Burden of proof is shifted from the arresting officer to person arrested. The fee for automobile driver's license was increased from \$1.00 to \$1.50, with 50¢ of each fee going into a hospital fund to reimburse hospitals for care of indigent persons injured in automobile accidents.

Free textbook privileges were extended to parochial schools.

The Oregon Food Act regulating foods intended for human consumption is the most important of the several acts relating to the Department of Agriculture. Numerous changes were made in the tax laws, the most important being in the change in the date of assessment of property to January 1, the change in the date when taxes are payable to November, and the change in the end of the fiscal year of counties and municipalities from December 31 to June 30. Unemployment compensation law changes were made (see LABOR LEGISLATION) and changes also were made in the law providing for the gathering and registration of vital statistics. A referendum petition filed on the act taxing cigarettes postpones the operation of this act until after the next general election.

Finances. Total tax collections in Oregon for the fiscal year ending in June, 1941, were \$35,964,000 (1940: \$31,825,000). Total sales taxes amounted to \$12,768,000, equaling \$12,133,000 in motor fuel, and \$635,000 in alcoholic beverage. Taxes on specific businesses ran to \$3,310,000, unemployment compensation, \$7,138,000. The net income taxes were \$7,285,000. Cost payments for the operation of general government totaled \$30,549,000 in 1939, the latest year available. (Revenues for the general government for that year were \$43,555,000.) Cost of operation per capita was \$28.50. Total gross debt outstanding in 1941 was \$34,986,000, as compared with \$60,999,000 for 1932.

Officers and Judiciary. The Governor is Charles A. Sprague (Rep.), inaugurated in January, 1939, for a four-year term; Secretary of State, Earl Snell; Attorney General, I. H. Van Winkle; State Treasurer, Leslie M. Scott; State Auditor, Earl Snell. Chief Justice of the Oregon Supreme Court is Percy R. Kelly; there are six associate members elected by popular vote for six-year terms. See FLOOD CONTROL; FLOODS; GEOLOGICAL SURVEY.

ORGANIZATIONS. See SOCIETIES AND ASSOCIATIONS.

OSTLAND. See GERMANY under *History*.

OSTMARK. See AUSTRIA.

OUTER MONGOLIA. See CHINA; MONGOLIA.

OVERTIME PAY. See LABOR CONDITIONS.

PACIFIC DEVELOPMENT COMPANY. See ECUADOR under *History*.

PAHANG. See BRITISH MALAYA.

PAINTING. See ART.

PAINTS, PIGMENTS. See CHEMISTRY, INDUSTRIAL under *Paints for Blackouts*. For sales, see BUSINESS REVIEW.

PALAU. See JAPANESE PACIFIC ISLANDS.

PALESTINE. A territory on the east coast of the Mediterranean, administered by Great Britain under the mandate of the League of Nations since Sept. 29, 1923. Capital, Jerusalem.

Area and Population. Area, 10,429 square miles; population (June 30, 1940), 1,517,112 permanent residents, of whom 941,362 were Moslems, 456,743 Jews, and 119,007 Christians. The net increase by births and immigration during 1931-39 was 468,384, divided as follows: Jews, 270,851 or 155.1 per cent; Moslems, 167,433 or 24.2 per cent; Christians, 28,051 or 31.6 per cent. United States citizens in Palestine on Jan. 1, 1941, numbered 8,500. From Apr. 1, 1939, to Sept. 30, 1940, there were 12,270 legal and 16,100 illegal immigrants into Palestine, virtually all of them Jews. The immigration quota for that period was 19,601. Estimated populations of the chief cities in 1939 were: Tel-Aviv, 130,300 (all Jews); Jerusalem, 129,800; Haifa, 104,800; Jaffa, 77,400; Nablus, 19,900; Gaza, 19,900; Hebron, 19,000.

Education. In July, 1939, there were an estimated 347,500 children between the ages of 5 and 15, including 251,000 Moslems, 71,000 Jews, and 25,500 Christians. The number of children of all ages attending school in 1938-39 was 166,646 (63,190 Moslems, 79,217 Jews, 23,523 Christians, and 716 of other faiths). The Hebrew University at Mount Scopus, Jerusalem, had 1,106 students in 1939-40, Hebrew Technical Institute at Haifa, 499 students.

Production. Agriculture is the main occupation, although the value of manufactures exceeded that of agricultural products for the first time in 1940. The chief crop is citrus fruit. Exports in 1938-39 were 15,310,436 cases valued at £P4,370,078, but due to the war exports declined to less than 7,000,000 cases in 1939-40 and to an insignificant quantity in 1940-41. The 1940 grain harvest was a record one, totaling 334,000 tons (chiefly wheat, 170,000 tons, barley, 90,000; millet, 65,000; corn, 9,000). The 1940 sesame crop was double the 3,800 tons of 1939. The yield of potatoes in 1939 was 104,000 metric tons; olive oil, 3,000. Production of potash in 1939 was 63,527 tons; salt, 9,000 (1938), refined bromine, 589 tons (1939); cement, 112,350 tons (1939).

There were 5,606 Jewish industrial enterprises in 1939 with an annual output valued at just over £9,000,000 (sterling). At the beginning of 1941 the total capital invested in Jewish industries was £12,000,000. Chief manufactures: Clothing, textiles, leather, timber products, metals and machinery, printing and paper, food, chemicals, cement. Olive oil, soap, and wine are other products. A large oil refinery at Haifa began production early in 1940.

Foreign Trade. Excluding imports of military stores and fuel, imports during 1940 were valued at £P10,848,000 (£P14,632,822 in 1939). Excluding crude petroleum and Dead Sea potash, exports for 1940 declined to £P2,112,000 from £P5,117,769 in 1939. Suspension of citrus fruit shipments was the chief reason for the export decline. Imports from the United States in 1940 were \$4,176,899 (\$7,645,696 in 1939).

Finance. For the fiscal year ended Mar. 31, 1941, Government revenue from local sources was £P5,184,000; expenditure, £P7,552,000; British grant-in-aid, £P3,290,000. Expenditures budgeted for 1941-42 amounted to a record total of £P10,500,000, including the Palestine Railways and nearly

£P2,000,000 allocated for public works. The external debt on Mar. 31, 1940, totaled £4,475,000. The Palestine pound (£P) is equivalent to one pound sterling.

Transportation. Palestine in 1941 had about 328 miles of railway line; over 2,200 miles of highways, including the Palestine section of the new Haifa-Baghdad road, and British, Dutch, and Egyptian air lines connecting Lydda and other cities with Egypt, South and West Africa, Iraq, India, Netherlands Indies, and Australia. During 1940, the railways carried 973,508 metric tons of freight and 1,362,039 passengers. A total of 1,857 steamers of 4,370,085 tons entered Palestine ports in the foreign trade during 1939.

Government. The territory is administered by a High Commissioner (Sir Harold Alfred MacMichael assumed the office Mar. 1, 1938), who is appointed by the British Crown and assisted by executive and advisory councils. The Jewish, Moslem, and Christian communities have autonomous control of their religious, cultural, and communal affairs. Official languages, English, Arabic, Hebrew.

History. With the German drive into the Balkans in the spring of 1941, Palestine was drawn more actively into the European War. Occupation of Crete and of air bases in the Italian Aegean Islands (q.v.) enabled the German air force to join the Italians in sporadic air raids upon Palestinian cities. As in 1940, Haifa was again the main objective of these attacks. Air raid shelters were constructed there and in Tel-Aviv, Jerusalem, Jaffa, and other towns, and blackouts and other precautions were enforced.

The British used Palestine as an important base in ousting the pro-Axis Iraqi regime of Premier Rashid Ali Al-Gailani in May and in ending the Vichy Government's control over Syria and Lebanon in June-July. This relieved apprehension that the Germans would utilize Iraq and Syria as bases for the conquest of Palestine and the cutting of the Suez Canal.

In connection with preparations to meet the German threat in this region, the British established a War Supply Board (February 26) to enlist Palestine's factories and other facilities in producing military supplies for their armies in the Middle East. They also speeded up the recruiting of Palestine Arabs and Jews for service in various units of the Imperial defense forces. By June, 1941, some 10,000 Jews were reported to have enlisted, as well as a considerable number of Arabs. Zionist leaders in Britain and the United States seized the opportunity presented by the German menace to Palestine to demand the arming of the Jewish population and the creation of a separate Jewish army to fight on the British side. The proposal was rejected by the British Government because of expected adverse repercussions on Arab-British relations throughout the Middle East. To calm Arab protests at the large number of Jews entering Palestine illegally, the British granted no immigration quota for the first three quarters of 1941. Nevertheless 2,565 immigrants entered during the first four months of the year.

From Syria and Axis news centers came reports of anti-Jewish outbreaks among the Palestinian Arabs during the British war with Rashid Ali Al-Gailani's Government in Iraq. Axis agents were said to have smuggled arms to Arab tribesmen in Palestine. However reports from British and Jewish sources indicated that the rapprochement between Arabs and Jews that followed the outbreak of the European War was not vitally disturbed. Ten Arab students registered in the Hebrew University of Jerusalem. There was fraternization between the faculty of that

institution and visiting Arab scholars. Arab and Jewish citrus growers established a permanent agency to direct activities of mutual economic benefit.

The drastic reduction of citrus exports and of other foreign trade produced a serious economic depression, and forced the government and the religious communities to undertake extensive relief measures. A levy was imposed on all fruit sold for internal consumption and the proceeds used to assist citrus growers. The Government on March 27 also imposed an income tax for the first time since the biblical tithe, levying 10 per cent on all companies' earnings in 1940. It also undertook to reimburse banks for loans made to citrus growers in 1940 under a limited state guarantee. The banks then agreed to finance the growers for 1941-42 on substantially the same terms as before.

Continuance of the struggle between pro-British and anti-British Arab factions in Palestine was indicated by the assassination of the Anglophile Arab leader, Fakhri Bey Nashashibi, in Baghdad in November. Apparently he was the victim of adherents of the violently anti-British Grand Mufti of Jerusalem, Haj Amin el Husseini, who was driven from his refuge in Baghdad to Iran by the British occupation of Iraq in May. From Tehran the Grand Mufti escaped to Turkey at the time of the Anglo-Russian invasion of Iran. He then went to Rome and later Berlin, where he delivered anti-British propaganda broadcasts to the Arab peoples of the Middle East. The pro-British sympathies of Arabs opposing the Mufti's policy were strengthened by pledges to assist the independence and federation of the Arabs, issued by Foreign Minister Anthony Eden in June, by Prime Minister Winston Churchill, and by the British Minister of State, Oliver Lyttelton, in Amman, Trans-Jordan, in September.

See CHEMISTRY, INDUSTRIAL, IRAQ and SYRIA AND LEBANON, under *History*.

PALMYRA ISLAND. A coral atoll in the Central Pacific (6° N. and 162° 30' W.) belonging to the United States. It is under the jurisdiction of the Navy Department. Land area, 1½ square miles. As Palmyra lies almost halfway between Hawaii and American Samoa, the U.S. Navy Department in 1939 decided to convert it into an intermediate station for seaplane patrols operating from those bases. Congress voted \$13,000,000 for the establishment of an auxiliary naval air base at Palmyra and in March, 1941, an additional \$6,935,500—almost evenly divided between Palmyra and Johnston islands—was appropriated for the installation of carrier landplane runways and other aviation facilities.

Although title to the island remained in litigation (see YEAR BOOK for 1940, p. 574), the work of cutting a channel through the reefs and removing coral heads within the lagoon was pushed forward in 1941 and the lagoon was placed in service as an emergency seaplane landing field and fueling base. Effective May 15, 1941, the island was declared a "naval defensive sea area." Unauthorized vessels and aircraft were barred from a three-mile zone around it.

P-AMINO BENZOIC ACID. See BIOLOGICAL CHEMISTRY under *Vitamins*.

PANAMA. A republic of Central America, bisected by the Panama Canal Zone (q.v.). Capital, Panamá.

Area and Population. Area, 34,169 square miles; population (estimated, September, 1940), 650,000 excluding the Canal Zone. Racial division of population (1930 census): 78,813 whites, 69,583 Ne-

groes, 42,897 Indians, 4,138 Orientals, 249,583 mestizos. Census populations of the chief cities were Panamá, with suburbs, 123,270 (1940); Colón, 46,000; David, 20,088. United States citizens residing in the republic on Jan. 1, 1941, numbered 7,222. Non-transient passengers arriving at Canal Zone ports in 1940 numbered 46,237; departures, 32,081.

Education and Religion. About half the adult population is illiterate. There were 61,706 pupils in 629 public elementary schools (1938-39), 3,830 in secondary schools (1937), 1,012 students in the Instituto Nacional or college for higher instruction, and about 500 students in the University of Panamá, besides various special, normal, and vocational schools. The Constitution of Jan. 2, 1941, recognizes the Roman Catholic Church as that of the majority of the people, but guarantees freedom of religion.

Production. The chief occupations are agriculture, cattle raising, lumbering, pearl fishing, commerce, and the tourist business. Bananas are the chief domestic export; shipments were about 5,413,000 stems valued at \$2,430,000 in 1939. Coconuts, sugar, cacao, coffee, rice, tobacco are other crops. The forests yield hardwoods, copaiba, sarsaparilla, balata, etc. About 40,000 cattle are slaughtered annually. Transient passengers through the Panama Canal in the year ended June 30, 1941, numbered 79,954 (114,053 in 1939).

Foreign Trade. Panama's yearly exports totaled \$4,054,866 for 1940 (\$3,487,187 for 1939); imports, \$23,936,657 for 1940 (\$20,463,765 for 1939). The United States took \$3,788,022 (93.42 per cent) of the 1940 exports and sent \$16,645,743 (69.54 per cent) of the imports. See TRADE, FOREIGN.

Finance. The biennial budget covering the years 1941 and 1942 provided for expenditures of \$30,127,977, the highest in Panamá's history. For 1939 and 1940 the budget estimates balanced at \$22,795,000. During 1940 the external debt was reduced to \$15,313,500 and the internal debt to \$2,304,367. As of Mar 31, 1941, Export-Import Bank loan commitments to Panamá totaled \$3,300,000 exclusive of \$1,625,000 outstanding. Issuance of a new \$4,000,000 loan was authorized in August (see *History*). The balboa, unit of currency, is equivalent to the U.S. dollar.

Transportation. Including the Canal Zone, Panamá has 230 miles of railways and 870 miles of roads. The Panamá-Cristóbal air service connects at Panamá with Pan American Airways' international network. Under construction in 1941 were the transisthmian highway and the 55-mile concrete highway between La Chorrera and the new United States auxiliary air base at Río Hato (see YEAR BOOK for 1940, p. 576). Practically all overseas trade passes through the Canal Zone ports of Cristóbal (serving Colón) and Balboa (serving Panamá). For shipping traffic, see PANAMA CANAL.

Government. The Constitution effective Jan. 2, 1941 (see YEAR BOOK for 1940, p. 575), extended the terms of office of the President and members of the National Assembly from four to six years and increased the powers of the President. The President and the 32 members of the National Assembly are elected by direct popular vote.

HISTORY

President Arnulfo Arias, after putting into motion early in 1941 an ambitious Panamanian new deal and himself wielding great powers, was ousted from office during absence from the country in October and replaced, without recourse to a popular election, by his own Minister of Government, Ricardo Adolfo de la Guardia. Panamá declared war on Japan, Germany, and Italy in December, ranging

herself with the United States. A law adopted and put into effect under Arias virtually drove Asiatics and to some extent other foreigners in the country out of business.

The Overthrow of Arias. On October 8 President Arias and his Cabinet, according to account in the press, decided to prevent the use of Panamanian registry by armed merchantmen by canceling such registration in the case of any merchant ship that was armed. The Government of Panama so informed the U.S. Government. On the next day (7th) Arias left Panama, taking an airplane for Cuba under an assumed name. Officials of the Government of Panama called on U.S. Ambassador Wilson, October 9, and asked him how the United States would regard their taking over the executive power, their government being without a head. He indicated that the United States followed the policy of not interfering in other countries' internal affairs.

The group ousting Arias took the position that his departure from the country with neither the Assembly's permission nor the Supreme Court's severed him from his functions, according to the constitution of 1940, which had taken effect Jan. 2, 1941. On this ground the ousting group held that the presidential office devolved on Ernesto Jaén Guardia, the second of three designates who had been named some time before in order to settle the succession in case of a vacancy. Jaén Guardia, sworn in October 9, appointed a Cabinet and then immediately gave his resignation. The new cabinet then elected as President one of its own members, Ricardo Adolfo de la Guardia, former Minister of Government under Arias. The ousting group's arrest of Isaza (Arias' private secretary), Rodriguez (official secretary), Barletta (mayor of Panama city), Pezet (first designate), Ayao (chief of the national police), and many others assured that the coup should be bloodless. The Supreme Court voted, October 13, that Arias' absence without leave had forfeited him the office. President Arias returned to Panama by the Honduran steamship *Cefalu*, October 14. He attempted to come ashore in Cristóbal harbor but was not allowed to do so in the Canal Zone, policed by U.S. authority, and eventually consented to go into Panamanian territory and surrender himself. The new regime in Panama voted permission, October 18, to merchantmen registered under that country's flag to carry arms for their own defense. Arias, released, left Panama October 21.

Question was raised in Washington, just after the coup, whether the United States had helped those who performed it. Secretary of State Hull issued to the press, October 16, a denial of any part in the proceedings, on the part of the U.S. Government. This statement carried a purported summary of official telegraphic reports from the embassy at Panama. As to the reason for Arias' sudden departure from Panama just before the coup and immediately after the issuance of the anti-arming decree, he himself said that he had gone to Havana simply for medical attention to his eyes. He had previously left the country for a week in July to visit the President of Costa Rica; but on this occasion Pezet, the first designate, had temporarily taken his place.

At the time of the coup there passed many assertions of Arias' having displayed partiality toward the Nazis' concerns and toward the German cause. Such statements appeared chiefly, but not solely, after the decree against arming ships. Since the merchant vessels put under the flag of Panama belonged chiefly to owners in the United States, and since the latter sought that flag mainly to escape the restraint that the Neutrality Act had laid on American vessels, a tendency in Panama to copy such an Ameri-

can restriction as that on arming vessels had the effect, whatever its intention, of an unneighborly act. The Arias Government could give little real comfort to the United States by pointing out that it sought to keep in step by doing as the United States had done.

Defensive Partnership with U.S. With the notable exception of the refusal, so soon overcome, to let armed merchantmen fly Panama's flag, the Government of Panama made in 1941 a good record of helpfulness to the United States' efforts for defensively strengthening the Panama Canal. Arias, January 7, sent President Roosevelt a pledge that Panama would cooperate to assure the "territorial and political integrity of our continent," to which Mr. Roosevelt made an appreciative reply. In March Arias announced that his Government would permit the United States to build defenses outside the Canal Zone, in accordance with the agreement of 1938, but would retain sovereign rights over the territory thus employed and would keep jurisdiction over civilians on such ground. The land sought was in great part for listening posts and anti-aircraft works—distant features of the Canal's defenses, not required at the time when the original defenses were laid out. In August Arias reported to the Assembly that Panama had conceded to the United States the use of sites for such purposes on condition that they be returned to her after the conclusion of the World War and that proper compensation be paid.

De la Guardia's regime lost no time at its outset in permitting armed ships under Panama's registry. Later, Panama declared war, December 8, on Japan and, December 12, on Germany and Italy. An executive proclamation of December 7 announced internment for Japanese and ended their right to export gold and funds.

Arming the Merchant Ships. The merchant fleet of Panama numbered 270 vessels. In 1941 these aggregated 1,175,000 tons. Only five nations' flags were said to float over more tonnage. The number of vessels that had left U.S. registry to take that of Panama was put at 82; their tonnage, at 420,000, thirteen-fourteenths of it in oil-bearing tankers. These particular vessels were presumably by no means the only ones controlled by the shipping trade of the United States. The torpedoing of two ships under Panama's flag, the *Sessa* and the *Montana*, caused Panama to send (September 16) to Germany, the Government deemed responsible, a protest and claim for indemnity. It was the sinking of these vessels that occasioned the demand for permission to arm craft under Panama's flag and ostensibly also Arias' decision to deny this demand and so shun a way likely to lead to worse relations with Germany. The United States did not formally meddle in the matter by any such step as asking Arias to allow ships to arm. The prompt repeal, by de la Guardia, of the prohibition set up by his predecessor implied that he must have thought the removal of the ban more acceptable to the affected interests than its presence.

Nationalization of Commerce. The Arias administration was nationalistic, in the sense that it sought to cultivate the interests of the nation as a whole to the possible detriment of some individuals, particularly aliens, and some other nations. To this end it adopted a policy of restricting retail trade, with few exceptions, to natives of the country. The Assembly enacted in February a measure requiring all retail merchants to apply for licenses allowing them to continue their business. These licenses were to be issued mainly to natives, some to foreigners of preferred nationalities, and a small remainder to na-

tionals of the restricted-immigration group, chiefly Asiatics. Licensing went on from July into October. It was to become effective late in October as closing unlicensed business. Under Arias the principal Asiatic firms received licenses.

Citizens of the United States fared relatively well, belonging to a preferred nation. After the ousting of Arias, the administration of de la Guardia revised the issue of licenses to some extent and thus took away, in particular, all that had been granted to Japanese. The Government of Japan protested on its nationals' behalf and, as it declared, on that of Asiatics in general who suffered under the law. Its first protest, November 7, and a second, two weeks later, had no effect. The number of Japanese in Panama was reckoned at 258 in August. The operation of the new law under de la Guardia was so conducted as virtually to eliminate the small Japanese colony, which was regarded as dangerous in view of its proximity to the canal and of the increasing possibility of war between the United States and Japan.

Control of Foods. Under the Constitution of 1940 the government had power to create monopolies as means to meet public needs. It used this power in the spring in an effort to check a growing scarcity and cost in foodstuffs. In May it took control of the sale of rice, with a view to stabilization at 6 cents a pound retail, and similar action was taken or planned in other cases. The trouble arose largely from difficulty in securing the normal imports of food and from a lower harvest, particularly of rice, in the previous season.

Financial Steps. In March the Government, taking advantage of opportunity to get a lower rate of interest, marketed in the United States an issue of \$4,000,000 of 3½-per cent 26-year bonds, of the proceeds, about \$3,500,000 represented 5½-per cent bonds to be received in exchange and retired. The new bonds were secured by a lien on part of the United States' payments to Panama of annuity as rental of the Canal Zone.

Other Acts of Arias Administration. An act of 1941 gave to women of 21 years, qualified by education, the right to vote for and to serve as members of provincial councils. This law was applied first in an election held on October 5. A homestead act, designed to secure the country population's tenure of land, gave special immunities to homesteads not exceeding 1,000 balboas in value or 25 acres in extent; they could not be sold, mortgaged, or taxed. A social-security act, providing for employees' retirement, taxed employers at the rate of 2½ per cent of payroll and employees at the same percentage of pay; it superseded a law of 1931 allowing an employee 10 months' pay on retirement after 10 years of service.

Relations with Other Nations. Apart from the United States and Japan, already mentioned, several countries' relations with Panama had significance. With regard to the belligerents in general, President Arias expressed the country's approval of the Roosevelt-Churchill Atlantic Declaration (q.v.) of August. A considerable number of the German colony left—23 of them on a Japanese vessel in mid-April, in apparent conformity with a supposed order from German authorities. The number of Germans in Panama at the time was said to approximate 900. Concern about the propaganda activities of the German Legation was reported in August. The Spanish Minister, the Count of Baylen, was declared *persona non grata*, November 10, apparently on account of a slur on the independence of Panama, which he was reported to have uttered. For the settlement of the boundary dispute with Costa Rica, see COSTA

RICA under *History*. Also see LEND-LEASE ADMINISTRATION; ROADS AND STREETS.

PANAMA CANAL. The Panama Canal crosses the Isthmus of Panama between Limon Bay on the Caribbean coast and Panama Bay on the Pacific Coast. Its length from shoreline to shoreline is 40.27 miles. The U.S. Government owns and operates the canal. A strip of territory bordering either side, held and governed by the United States, constitutes the PANAMA CANAL ZONE (q.v.).

Yearly Traffic. In the fiscal year ended with June 30, 1941, the net tonnage borne across the Canal fell to 20,642,936 net tons, which was below the total for any other fiscal year after 1933, when 21,094,000 net tons crossed. Toll paid by ocean-going vessels for crossing amounted to \$18,157,740 for fiscal year 1941, the lowest yearly collection after 1923. Less than two years of the obstacles to navigation occasioned by war, such as destruction of vessels and blockade of ports, had reduced passages through the Canal to an average of 9.67 a day for June, 1941, from 15.97 a day for June, 1939, or to three-fifths of the earlier rate.

Detailed data on traffic covered the fiscal year 1941, which ended with June 30. The following figures deal with fiscal years. Crossings made by commercial vessels of at least 300 net tons (Panama Canal measurement) numbered 4,727 for 1941 (5,370 for 1940).

Tons of cargo crossing in the commercial ships of 300 or more tons totaled 24,950,791 for the fiscal year 1941 (27,299,016 for 1940); but in net tonnage, as measured under the rules of the Canal, the totals were much lower, being only 20,642,736 for 1941 (as against 24,144,366 for 1940). The collections of tolls, exclusive of some thousands on vessels under 300 tons, amounted to \$18,157,740 for 1941, a sharp drop from 1940's total of \$21,144,675. Net revenue from operation was \$11,253,773 for 1940; \$8,852,037 for 1941.

By tons of cargo, U.S. shipping through the canal increased to 12,384,617 for 1940, from 9,909,380 for 1939, and attained 45.4 per cent of all tonnage of cargo passing through in 1940. The tonnage of British cargo dropped to 5,182,351 (1940) from 6,801,556 (1939); that of Norway to 2,905,772 (1940) from 3,408,078 (1939). That of Japan rose to 1,863,619 (1940) from 1,710,303 (1939). See YEAR BOOK for 1940 for additional data.

Operative Organization. Normally the Canal is operated, maintained, and improved as to construction by a Presidentially appointed Governor, supervised by the Secretary of War. The administration of the Canal is in accordance with an executive order of 1914. But an executive order of Sept. 25, 1939, put the Governor of the Panama Canal under the direction of the military commander of the Panama Canal Department, U.S.A. The Governor also exerts the civil authority in the PANAMA CANAL ZONE (q.v.).

Improvement of the Canal. The chief work of construction carried on in 1941 was that for giving the waterway a third series of locks. This task, ordered by an act of Congress in 1939, sought above all to lessen the risk of a stoppage of the way through the Isthmus in consequence of any hostile attack. Congress set the limit of cost at \$277,000,000 for the undertaking. The foremost advantages in view were the greatly diminished chance of bombs wrecking all the locks at one change of water level and increased quickness of the U.S. Fleet's passage from ocean to ocean. After nearly a year of engineers' studies of the project, construction started gradually in the latter part of 1940. On May 11, 1941, was

signed with a group of firms a contract for removal of 30,000,000 cu. yards of earth and rock at the sites of the intended locks on the Pacific slope; the work was to be performed in 1,200 calendar days. It appeared from the limit of time thus set that the new locks themselves could hardly all be installed and put into service within four years.

On June 14 Rear Admiral Sadler stated the U.S. Navy's intention to effect, in connection with the third set of locks, the construction of a dry dock of a size to take the greatest ships of war and to have near by storage room for abundant fuel oil and other supplies. Also see **COLOMBIA** and **PANAMA** under *History*, **ROADS AND STREETS**; **TUNNELS**.

PANAMA CANAL ZONE. A strip of territory extending across the Isthmus of Panama, bordering the Panama Canal waterway to a width, on either side, generally of five miles and forming a perpetual concession from the Republic of Panama to the United States. Area, 552.95 sq. mi.; includes water, 190.94 sq. mi.

Population. An enumeration by the Canal Zone police in June, 1941, showed 42,346 civilian inhabitants, as against 28,978 in a count made in June, 1939. The heavy increase in the two years reflected the employment of more civilians on work in the area. The U.S. Census of 1940, not limited to civilians, gave the population as 51,827. Employees of the Panama Canal and of the Panama Railroad Company numbered 24,149 in June, 1940, as against 14,757 in June, 1939; they did not all live within the Zone. The death rate among the Zone's inhabitants (many of whom eventually depart by reason of retirement and not of death) was 6.43 per 1,000 for 1940; birth rate, 10.91. Sufferers from malaria among the civil employees came to 17 per 1,000, but none had died of the disease in seven years. The separate white and colored public schools had respectively, in 1941, an average attendance of 3,296 and 2,725 pupils.

The land area, 362.01 sq. mi., included 66.85 sq. mi. of military reservations and 7.36 sq. mi. of naval reservations. On these were maintained the Panama Canal Department, U.S.A., and the home of the Panama Canal Zone District, U.S.N. These areas contained some thousands of men in the armed services of the United States.

Government. The Panama Canal Zone has a civil government prescribed by the U.S. Congress in the Panama Canal Act of 1912 as later modified. The Governor of the Panama Canal (q.v.) also governs the Zone, under supervision, normally, of the U.S. Secretary of War; but the President's executive order of Sept. 25, 1939, subjected the Governor's functions over the Zone, as well as over the Canal proper, to the authority of the commanding general of the Panama Canal Department, U.S.A. Subject to such superior authority, the Governor has charge of the maintenance of law and order, health, and education among the inhabitants. Governor in 1941, Brig. Gen. Glen E. Edgerton.

History. The warlike conditions of 1941 brought about noteworthy occurrences in the Panama Canal Zone. In October, when President Arias of the Republic of Panama (q.v.) was driven out of office by a coup, he attempted after its accomplishment to reenter the republic. According to dispatches in the press of October 15 and 16, Arias was prevented by police of the Zone, for some hours, from leaving the Honduran ship *Cefalu* at Cristóbal, and communication with Enrique Linares, his father-in-law, was denied him. He then agreed to surrender to the police of the republic. On March 30 the 23,000-ton Italian liner *Conte Biancamano*, after lying

at Cristóbal from the time of Italy's going to war, was seized by the United States; she had previously been made to move from an anchorage near the entrance of the Canal, where the vessel might have been employed in some way to interrupt the Canal's working. She was taken to New York in April by the U.S. Government; there several of her company were prosecuted for attempting to damage the ship.

The Zone cooperated with the Republic of Panama, December 8, as the United States went to war, in seizing Japanese and other nationals of governments within the Axis group. On June 19 an executive order of the President suspended the restriction of labor to eight hours a day on construction for the U.S. Government in the Canal Zone. A military post on the shore of Gatun Lake was created in April, and in June the fortification of three islands in that lake was ordered, with a view to greater protection of the Canal's interior part from attack by air

PAN AMERICAN AIRWAYS. See **AERONAUTICS** under *World Air Transport*.

PAN AMERICAN GAMES. See **OLYMPICS**.

PAN AMERICAN HIGHWAY. See **ROADS AND STREETS**.

PAN AMERICANISM. The Pan American movement, and with it the good neighbor policy which the United States Government had assiduously pursued in Latin America since 1933, was subjected to severe tests in 1941. The severance of virtually all trade relations between Europe and the Western Hemisphere threatened many of the American republics with an economic crisis of the first order. Agents of the Axis powers made a vigorous, systematic effort, backed by intensive propaganda, to place pro-Axis regimes in power in a number of Latin American countries and thus to disrupt the program of hemisphere solidarity laid down at the Pan American Conferences of 1933, 1936, and 1938, and at the meetings of American Foreign Ministers in 1939 and 1940 (see preceding **YEAR BOOKS**).

Moreover the danger of an Axis military invasion of South America increased after the German victories of April and May in the Balkans, when France moved toward military as well as economic collaboration with the Reich. Efforts by Washington to counter this threat were hampered by unawareness of danger among many South Americans, doubt as to the intentions and power of the United States, and the political, legal, and financial difficulties in the way of obtaining the necessary defense facilities. Nevertheless the end of 1941 found all these difficulties well on the way toward solution

Economic Developments. The economic crisis predicted for many Latin American countries as a result of the loss of European markets failed to develop in acute form, due primarily to Washington's concerted policy of economic aid. There was a tremendous expansion of inter-American trade, stimulated by United States loans and purchases (see **TRADE**, **FOREIGN**).

The rapid development of defense industries in the United States created an active unofficial demand for the strategic minerals and materials of Latin America. In addition, the Metals Reserve Company and Defense Supply Corporation, subsidiaries of the Reconstruction Finance Corp., contracted for virtually all the surplus Latin American metals and other war materials. The Export-Import Bank (q.v.) of Washington made further large loans to various Latin American governments for the development of transportation facilities and for the adjustment of their economic systems to new world conditions. Moreover some \$500,000,000 of lend-lease funds were earmarked for Latin America,

PROGRESS OF INTER-AMERICAN ECONOMIC COOPERATION, SEPTEMBER, 1939, TO SEPTEMBER, 1941

Country	Increased exports to United States	Inter-American coffee agreement	National councils established by		Increased purchases from United States	Trade agreements with United States ^a	Signatories to Inter-American Bank Convention	U.S. Government purchases of strategic and critical materials ^b	United States technical assistance and surveys	U.S. Treasury stabilization fund agreement
			Inter-American Development Commission	Export-Import Bank loans						
Argentina . . .	X	..	X	X	X	X ²				X
Bolivia	X	..	X	X	X					X
Brazil	X	X	X	X	X	X ¹	X	X	X	..
Chile	X	..	X	X	X	X ²		X	X	..
Colombia . . .	X	X	X	X	X	X ¹	X		X	..
Costa Rica . .	X	X	..	X	X	X ¹			X	..
Cuba	X	X	..	X	X	X ²		X	X	..
Dominican Republic	X	X		X	X		X		X	
Ecuador	X	X	X	X	X	X ¹	X		X	..
El Salvador . .	X	X	..	..	X	X ¹			X	..
Guatemala . .	X	X	..	..	X	X ¹			X	..
Haiti	X	X	..	X	X	X ¹		..	X	..
Honduras . . .	X	X	..	..	X	X ¹			X	..
Mexico	X	..	..	..	X		X	X	X	..
Nicaragua . . .	X	X	..	X	X	X ¹	X		X	..
Panama	X	..	..	X	X		..		X	..
Paraguay . . .	X	..	X	X	X		X		X	..
Peru	X	X	X	X	X		X		X	..
Uruguay	X	..	X	X	X	X ²				..
Venezuela . . .	X	X	X	X	X	X			X	..

^a Including (1) agreements signed prior to September, 1939, and (2) countries with which intention to negotiate was announced (3) An agreement with Cuba was in effect at the outbreak of the war, a supplementary agreement was signed Dec 18, 1939, and intention to negotiate a new supplementary agreement was announced July 26, 1941.
^b In addition to direct U.S. Government purchases, strategic and critical materials were purchased in the Latin American countries for private United States account

chiefly for the construction of air and naval bases and the equipment of defense forces.

The Inter-American Financial and Economic Advisory Committee, established at Washington by the Panama Conference of American Foreign Ministers in 1939, rescued 14 coffee-exporting Latin American republics from grave economic difficulties by placing coffee imports into the United States on a quota basis (April 15) and thus enabling them to maintain prices. The same committee helped to overcome the shipping shortage hampering inter-American trade by adopting on August 28 a plan for the taking over and operation of 546,000 gross tons of Axis and neutral merchant ships laid up in the ports of the Western Hemisphere. The British Government agreed to waive its belligerent rights with respect to these vessels. The seizure of German, Italian, and Danish ships in United States ports in April led to immediate similar action by Cuba, Costa Rica, Mexico, Venezuela, Peru, and Ecuador.

The Inter-American Development Commission, created at the suggestion of the Inter-American Financial and Economic Advisory Committee, continued its efforts to increase imports of noncompetitive Latin American products into the United States. It encouraged the development of handcraft and other industries in Latin America and the increase of trade between the Latin American countries. Co-operating Development Councils were established in all 10 of the South American republics. Important trade and economic accords concluded at the Regional Conference of the Rio de la Plata (q.v.) in January and in subsequent bilateral negotiations stimulated commercial exchange among the Latin American countries (see especially ARGENTINA and BRAZIL under History).

The U. S. Government made every effort, consistent with its defense requirements, to supply the Latin American countries with the manufactured goods they formerly obtained from Europe and Japan. The principle was adopted that the Latin American republics were to receive the same treatment as the United States in the distribution of available consumption goods. To facilitate exports to Latin America, the Export-Import Bank undertook to advance credits of some \$70,000,000 monthly to secure delivery of United States goods at Latin

American ports without prior payment. The U.S. Department of Commerce and the Office of the Coordinator of Inter-American Affairs assisted in this program.

In addition to extending economic aid to Latin America, the U.S. Government made a successful drive against Axis financial and economic influence in that area. Most of the American republics were induced to divert virtually all their exports of war materials to the United States as a means of economic defense against possible Axis aggression. Beginning July 17, a formal blacklist of Latin American individuals and firms believed to be acting in the interest of the Axis was proclaimed by President Roosevelt. It was subsequently extended and amended. Mistakes of German diplomacy and financial aid extended by the U.S. Defense Supplies Corporation, helped to force the transfer of some 20,000 miles of air lines in Latin America from German and Italian to United States or Latin American companies. Through efforts of the Coordinator of Inter-American Affairs (q.v.), numerous pro-Axis firms and individuals representing United States businesses in Latin America were forced out of their positions.

Cultural Interchange. This tightening of inter-American economic ties at the expense of the Axis powers was accompanied by the intensification of cultural contacts between the American republics. Governments, unofficial agencies, and individuals all contributed to the execution of the cultural interchange envisaged in various inter-American agreements. At the invitation of the U.S. Government and its various departments, universities, philanthropic and cultural organizations, etc., a steady stream of Latin American intellectual and professional leaders, educators, students, army, navy, and air officers; political leaders, social workers, and other representatives visited the United States. At the same time numerous North Americans were invited to the Latin American republics.

Visits were exchanged by delegations representing the Argentine Chamber of Deputies and the U.S. House of Representatives. Secretary of Commerce Jesse Jones announced August 15 a joint U.S. Army-Civil Aeronautics program for training more than 600 Latin American pilots and technicians in

the United States. Naval chiefs and officers of 11 American republics toured U.S. naval establishments in May as guests of the Chief of Naval Operations. The second Inter-American Conference of Committees on Intellectual Cooperation met in Havana in November.

Drift from Neutrality. As the world conflict expanded and drew nearer the Western Hemisphere, the neutrality program laid down by the American republics during previous years gradually crumbled. The more the United States strengthened its defenses and indicated its determination to resist Axis encroachments into the Western Hemisphere, the more aggressive many of the Latin American countries became in curbing Axis propaganda and upholding Pan American principles.

The U.S. Senate on March 10 reaffirmed the traditional U.S. policy of refusing to recognize the transfer of territory in the Western Hemisphere from one non-American power to another. This was followed by the establishment of temporary U.S. protectorates over Greenland and Iceland, the rapid development of U.S. defense bases in the British West Indies, and President Roosevelt's warning that Washington could not permit a hostile power to gain a foothold in the Azores or Cape Verde islands.

These developments made a distinct impression, favorable to the United States, among most Latin Americans. Following Washington's policy of all aid to Great Britain and her allies short of war, Uruguay led the Latin American procession away from strict neutrality. On June 20 its Government announced that Uruguayan ports would be opened to warships of any American nation that became engaged in war with a non-American power. By July 25, 13 other American republics including the United States had backed the Uruguayan proposal that all the Pan American nations make a similar declaration. Argentina, Chile, Peru, and Colombia either opposed the suggestion or considered it unnecessary.

Thereafter Washington made rapid progress in pressing to conclusion defense accords with Bolivia, Brazil, Uruguay, Mexico, and the Central American and Caribbean republics. Most of them obtained U.S. lend-lease funds, loans, or credits for the construction of naval and air bases and other strategic works. In return, they promised the use of these bases and facilities to United States armed forces in the event that country became involved in the World War. Brazil placed airports at the disposal of the United States airmen ferrying military planes to British forces in the Middle East, and in November cooperated with Washington in the military measures taken to insure the safety of the bauxite mines in Surinam (q.v.).

Effect of Japan's Aggression. Japan's treacherous attack upon the United States on December 7 caused a profound and indignant reaction throughout Latin America. The nine Central American and Caribbean republics immediately declared war upon Japan—and later on Germany and Italy. Mexico and Colombia severed diplomatic relations, and all of the remaining American republics abandoned strict neutrality by granting U.S. warships the right to use their ports or taking other measures of similar import. In each case the Latin American governments acted under Resolution XV adopted at the Havana Conference of American Foreign Ministers in 1940. It declared that any attempt on the part of a non-American state against the integrity or inviolability of the territory, sovereignty, or political independence of an American state would be considered an act of aggression against all other American nations.

Argentina, Brazil, Peru, and a number of coun-

tries froze Axis funds. Brazil and Ecuador clapped a strict censorship on the Axis press and Ecuador annulled the contracts of Japanese technicians employed in its oil fields. Chile, Bolivia, and Venezuela took steps to safeguard U.S. properties and mineral supplies. The majority party in Uruguay called for a war declaration. Further action in support of the United States was promised at a third special convocation of American Foreign Ministers, called by Secretary of State Hull at the urgent request of Chile and various other Latin American governments. The conference was scheduled to convene Jan. 15, 1942, in Rio de Janeiro. The severance of diplomatic relations with the Axis by the republics that had not already acted, measures to suppress Axis activities throughout the Americas, and closer economic collaboration were the chief moves contemplated. It was indicated that an effort to settle the boundary dispute between Ecuador and Peru likewise would be made. This controversy, which flared into undeclared warfare during 1941, remained the principal obstacle to peaceful collaboration among all the American states (see *ECUADOR under History*).

For the St. Pierre-Miquelon coup, which the U.S. Government protested as a violation of the Pan American convention of July, 1940, see *FRANCE* and *ST. PIERRE AND MIQUELON under History*. The convention barred the transfer of any colony or region of the Western Hemisphere from one non-American power to another.

See *BRAZIL, MEXICO, URUGUAY, VENEZUELA* and the other American republics under *History*, *ART under Latin America*; *COORDINATOR OF INTER-AMERICAN AFFAIRS, OFFICE OF THE; ECONOMIC WARFARE, BOARD OF; EXPORT-IMPORT BANK; FASCISM; INTER-AMERICAN UNION OF THE CARIBBEAN; LEAGUE OF NATIONS, PAN AMERICAN UNION, REGIONAL CONFERENCE OF THE RIO DE LA PLATA*

PAN AMERICAN UNION. The Pan American Union is an official international organization founded in 1890 as the International Bureau of American Republics and maintained by the 21 republics of the Western Hemisphere for the development among them of good understanding, friendly intercourse, commerce, and peace. It is controlled by a Governing Board, composed of the Secretary of State of the United States and the diplomatic representatives in Washington of the other republics, and is administered by a Director General and an Assistant Director chosen by the Board.

The Union publishes a monthly Bulletin which is issued in three editions, English, Spanish, and Portuguese, as well as numerous special reports on the countries which are members of the Union. These are widely distributed in all the republics of the American continent and are intended to make available information on the various aspects of inter-American activity.

The Pan American Union acts as the permanent organ of the International Conferences of American States which meet at intervals of five years. The last or Eighth of these Conferences was held at Lima, Peru, Dec. 9-27, 1938. The program and regulations of each Conference are prepared by the Governing Board of the Union, and in the interval between the Conferences the organization is engaged in giving effect to the resolutions adopted and also cooperates in securing the ratification of the treaties and conventions signed at each Conference.

The work of the Pan American Union during 1941 reflected the new duties and obligations imposed as a result of the European conflict. The

Inter-American Financial and Economic Advisory Committee meeting at the Pan American Union and composed of one expert from each American Republic, drew up a coffee quota agreement, fixing the amount which each producing country might export to the United States. It also studied the marketing of cacao and cotton, adopted measures to alleviate the petroleum shortage experienced by a number of countries, and approved a plan for the taking over of foreign flag vessels lying inactive in the ports of the American Republics.

By the end of the year thirteen governments had ratified the Convention for the provisional administration of European Colonies and possessions in America, signed at Habana in 1940.

As a further aid in the promotion of inter-American cultural relations a new Division of Music was established at the Pan American Union in February, 1941.

At the meeting of the Governing Board held on Nov. 5, 1941, the Secretary of State of the United States was reelected Chairman of the Board for the ensuing year. Diogenes Escalante, Ambassador of Venezuela, was at the same time elected Vice Chairman to succeed Francisco Castillo Nájera, Ambassador of Mexico Headquarters of the Union are at the Pan American Building, Washington, D.C.; L. S. Rowe, Director General; Pedro de Alba, Assistant Director.

See PAN AMERICANISM.

PANTELLARIA. An Italian island (32 sq. mi.; pop., 9,000) in the Mediterranean 45 miles from the coast of Tunisia and 62 miles from the Sicilian coast. Strategically situated to dominate the shipping route between the eastern and western Mediterranean, it was fortified by Italy during the crisis of 1935-37 in Anglo-Italian relations. The island has two small ports and was said to be equipped for use as an auxiliary air and submarine base (see map, YEAR BOOK for 1938, p. 360).

PANTOTHENIC ACID. See BIOLOGICAL CHEMISTRY under *Vitamins*.

PAPER AND PULP. Production of paper in 1941, all grades, is estimated at 17,280,000 tons. This is 20 per cent higher than the previous record made in 1940. The average yearly production ratio of paper mills for the year was 97.4 per cent, compared with 85.6 per cent for 1940. The production ratio for paper-board mills averaged 88.0 per cent, compared with 73.0 per cent for 1940.

The unprecedented demand for paper was due to the sharp increase in general business activity, stimulated by large government expenditures. The heavy volume of orders included not only actual requirements but forward buying in fear of a shortage and rise in prices. Added to this trade demand was the heavy buying of the government for direct use, defense, and lend-lease requirements. This abnormal demand resulted in the largest file of unfilled orders on record. The peak of orders in May, not including paper-board and building paper, exceeded production by 85,000 tons.

Production of paper steadily expanded from early in the year; in October it reached the notable monthly total of 1,600,000 tons, or at the annual rate of 19,000,000 tons. With imports at the annual rate of 3,000,000 tons, the paper supply in October reached an annual rate of 22,000,000 tons, or 4,500,000 tons above the previous record year of 1940.

Domestic chemical pulp production was 9,978,000 tons, of which 1,703,000 tons were bleached sulphite, 1,194,000 tons unbleached sulphite, 688,

000 tons bleached sulphate, 3,700,000 tons unbleached sulphate, and 609,000 tons soda pulp. The total supply represented by apparent consumption was 10,801,000 tons, the estimate of actual consumption 11,068,000 tons. Consumption of pulpwood totaled 15,750,000 cords at an average cost of \$8 per cord, compared with 13,742,958 cords at a cost of \$7.99 per cord for 1940.

Defense requirements sharply curtailed the use of chlorine for the bleaching of wood-pulp and very little was expected to be available in 1942, although the industry normally consumes about 70 per cent of the domestic output.

Early in the year paper and pulp were placed on the export-control list and licenses were required for shipment overseas. In November the OPM began to put into effect a pooling plan for all pulp production; the three chief producers of high quality sulphite pulp for nitrating purposes—Brown Company, Eastern Corporation, and Rayonier, Inc.—will draw upon the pool to supply their regular customers for the paper-making grades of sulphite pulp. This arrangement was intended to prevent the otherwise closing of numerous converting mills through lack of pulp. Despite the heavy demand expected in 1942, the capacity of the industry was considered adequate for actual needs, although some specialty papers may be unobtainable. The large quantities of paper recovered as waste by the many conservation of waste materials drives will substantially help the paper and paper-board supply situation. See TARIFF COMMISSION, U.S. For paper shortages, see NEWSPAPERS AND MAGAZINES. For waste paper, see GARBAGE AND REFUSE DISPOSAL.

STILLMAN TAYLOR.

PAPUA. See AUSTRALIA under *Overscas Territories*. **PARACHUTES.** See CHEMISTRY, INDUSTRIAL under *Textiles*. For **PARACHUTE TROOPS** see MILITARY PROGRESS; WORLD WAR.

PARAGUAY. An inland republic of South America. Capital, Asunción.

Area and Population. Area, about 169,266 square miles (61,647 sq. mi. east of the Paraguay River, and about 107,619 sq. mi. west of the river confirmed to Paraguay by the arbitral award of Oct. 10, 1938, which ended the Bolivian-Paraguayan dispute over the Chaco Boreal). The estimated population in 1940 was 1,000,000 of whom about 32,000 Paraguayans, 4,000 Mennonite farmers, and 8,000 aborigines inhabited the Chaco. With the exception of the small white ruling class, the people are of mixed Spanish and Guaraní Indian blood. Spanish and Guaraní are the spoken languages; Spanish the language of government, commerce, and education. The estimated population of Asunción on Dec. 31, 1939, was 104,819; of other cities in 1934: Villarica, 35,760; Itá, 30,252; Capiatá, 19,923.

Education and Religion. There is widespread illiteracy. In 1937 there were 139,466 pupils in 1,742 primary schools, 2,034 in secondary schools, and 350 students in the National University. Roman Catholicism is the State religion. Freedom of worship is guaranteed other faiths.

Defense. Paraguay on Nov. 1, 1940, had an active army of about 6,000, an air force of 170, and a trained reserve of 80,000 (mostly veterans of the Chaco War). The navy consisted of two armored gunboats and two other armed river boats.

Production. Agriculture, lumbering, and stock-raising are the principal occupations. Yields of the chief export crops were (in metric tons): Cotton, ginned, 6,500 in 1939-40; sugar, refined, 12,447 in

1940; rice, 2,530 in 1940; tobacco (exports only), 2,106 in 1940, a decline from 6,112 tons in 1933; yerba maté, (exports), 10,092 in 1940. Corn, manioc, beans, sweet potatoes, bananas, and other fruits are grown mainly for local consumption. Livestock at the beginning of 1940 included 3,507,000 cattle, 205,500 horses, and 195,260 sheep. Exports of quebracho extract in 1940 were 32,066 tons; canned meat, 9,100 tons; oil of petit-grain, 164 tons. Cheap textiles, shoes, leather goods, soap, furniture, matches, cigarettes, etc., are produced.

Foreign Trade. Imports in 1940 were 14,832,657 gold pesos (12,735,007 in 1939); exports, 11,385,104 gold pesos (16,001,345 in 1939). The leading exports in 1940 were (in gold pesos): Quebracho extract, 2,522,863; canned meat, 1,714,208; yerba maté, 1,463,779; cattle hides, 1,424,045; cotton, 1,266,617. Of the 1940 imports, Argentina supplied 45.1 per cent; United States, 21.3; Japan, 12.7. Of the exports, 36.4 per cent went to Argentina in transit, 22.5 to Argentina for consumption, 20.9 to the United States, and 12.7 to the United Kingdom.

Finance. The Treasury estimated the deficit for 1940 at 250,000,000 paper pesos on budgeted expenditures of 1,463,794,000 paper pesos. Estimates for 1941 balanced at 1,395,562,000 paper pesos, converting gold pesos to paper pesos at 160 to 1. Revenues were estimated at 583,400 gold and 1,302,218,000 paper pesos; expenditures at 1,259,934 gold and 1,193,965,000 paper pesos. The public debt on Oct. 31, 1939, totaled 19,745,381 gold and 1,336,583,561 paper pesos, or 2,907,328,620 paper pesos converting gold to paper at the official rate of 79.55 to 1. As of Mar. 31, 1941, Export-Import Bank Loans to Paraguay outstanding were \$1,485,000; additional commitments, \$2,405,000. Official exchange rate of the paper peso in 1940, \$0.00383 (\$0.00373 in 1939), gold peso, \$0.6086 in 1940 (\$0.6136 in 1939).

Transportation. There were in 1941 about 713 miles of railways and 3,759 miles of roads, mostly cart tracks. Construction continued during 1941 on the modern 102-mile highway between Asunción and Villarrica for which funds were advanced by the Export-Import Bank of Washington. Air lines link Asunción with Buenos Aires, Santos, and Rio de Janeiro. Situated 950 miles from the sea, Asunción is accessible to river vessels of 12 foot draft at all times of the year.

Government. A state of siege, or modified martial law, was in effect almost continuously from the outbreak of the Chaco War in 1932 through 1941. The Constitution of 1870 was suspended following the successful military revolt of Feb. 17, 1936. A Congress of 20 Senators and 40 Deputies (all Liberals) was elected Sept. 25, 1938, and on Apr. 30, 1939, Marshal José Félix Estigarribia (Liberal) was elected President, with the opposition National Republican (Colorado) party boycotting the polls in both instances. Congress resigned collectively Feb. 17, 1940, and the next day President Estigarribia assumed dictatorial powers. He appointed a committee of university professors to draft a new Constitution, which was promulgated Aug. 15, 1940, after ratification in a plebiscite (see YEAR BOOK for 1940, p. 582 for its provisions). President Estigarribia was killed in an airplane accident Sept. 7, 1940, and the Cabinet designated Gen. Higinio Morinigo, Minister of War, as Provisional President. On Nov. 30, 1940, he proclaimed the establishment of an absolute dictatorship.

HISTORY

President Morinigo maintained himself as dictator throughout 1941, though facing risk of overthrow in

repeated obscure attempts against his power. The indications were that he curbed not only partisan politics but to some extent other activities of the country. The army remained unduly large and security of the Government depended in great part on military politics.

Character of Morinigo's Government. While military considerations necessarily prevailed and the exercise of civil authority resembled that over an army, the group supporting and aiding Morinigo included a band of men of education and scholarly understanding. Four of this group held posts in the cabinet; three were former deans of faculties in the university and had gone through college together. One of them, Luis A. Argaña, was Foreign Minister. These intellectuals, as viewed by an American correspondent at Asunción, had definite plans for establishing a more "authentic" and viable democracy than the country had known. For this result they intended to use planned economy after the example of European countries and more recently of the United States. But first they sought to develop the necessary mentality among their people, meanwhile depending on the army during the possibly long time that this would require. To what extent the military half of the Cabinet and Morinigo himself fell in with these views did not appear, but no signs of discord were noted.

Among the military, Morinigo depended in part on Gen. Damaso Sosa Valdez and on a group of young officers who had risen in the war with Bolivia. Valdez might in some respects be put in this group, but he had for years held a peculiar military office, that of Commander of the National Cavalry. In this duty he had at his orders a body of soldiers barracked in Asunción and ready in troubled times to turn out one President and set up another. Valdez had retained this command and its king-making power through all the changes of government since Col. Rafael Franco's presidency in 1936-37, repeatedly refusing to enter the cabinet. But under Morinigo he took, late in 1940, the Ministry of the Interior, into which the previously separate ministries of development and of labor were merged. He was in turn succeeded in March by Carlos R. Andrada. The young officers' group were distinguished by antagonism to some—not necessarily all—of the senior officers of the army and navy. Accounts sometimes referred to them as the "boy heroes," and their military records apparently gave them influence over the troops.

Efforts at Revolt. For about six months, the first half of 1941, armed efforts against President Morinigo came in quick succession; thereafter none serious enough to be reported occurred. The Government announced, January 7, that a conspiracy headed by Col. Federico Schmidt had failed. Schmidt had led a revolution in 1936 against President Eusebio Ayala, which ended in Franco's establishment as President. On April 18 the Government announced that it had crushed another revolutionary movement. It told few details; but other sources indicated that this revolt would have put Franco back in power. Ex-President Franco was at the time an exile in Uruguay, operating a small soap factory. The Government of Uruguay, at Paraguay's request, forbade his leaving the country, April 19, and put a watch on him. Reports reached other countries by the 27th that about 90 friends of Franco had been arrested in Paraguay on charges of seeking to restore him. An abortive rising of the garrison of Pilar, apparently in April, may have formed part of the wider plan of the April revolt. At Pilar the garrison again rose, July 4, against officers in charge of it, but was promptly put down.

After these incidents the Government felt strong enough to threaten greater severity against future revolt or conspiracy. A series of decrees issued on July 27 and 28 set death as the penalty for a number of acts—attempt to turn over territory to any foreign power, the inducing of a foreign state to declare war on Paraguay, conspiracy to that end, participation in armed movements to disrupt the territory, or against the President's life. The penalty for seeking to change the Constitution by violent means was put at 25–30 years of prison. Severe penalties were prescribed for communistic agitation and for violent conflict between labor and capital.

Foreign Policies. The foreign relations of 1941 had to do mainly with Paraguay's immediate neighbors. This was the case perhaps even more than normally. The foreign trade was affected less by the war than in the generality of the South American countries. About three-eighths of the country's exports of 1938, by value, had gone to Europe. The war had shut much of this outlet, but exports to Great Britain were reported to have held up fairly well.

Paraguay made progress in its relations with Brazil, a contiguous country to the populous parts of which it had no practical way of transportation overland. On June 17 the two Governments signed treaties to improve commerce, transportation, and cultural bonds. See BRAZIL under *History* for their provisions. The Paraguayan Government expected from these treaties an increase of trade with Brazil from small past totals to something like the active trade with Argentina. Conventions with Argentina apportioned dredging on the lower Paraguay River and simplified regulations for vessels on several rivers.

Stand on World Affairs. Paraguay assured the U.S. Minister at Asunción, December 10, of its thorough solidarity with the U.S. Government in the presence of aggression from a non-American nation (Japan) and of readiness to act in conformity with the provisions of the conferences of Lima, Panama, and of Havana. On Mar. 3, 1941, the Export-Import Bank of Washington authorized an additional \$400,000 credit to the Paraguayan Government for the development of mandioca production.

See ARGENTINA and BOLIVIA, under *History*, LEND-LEASE ADMINISTRATION, PAN AMERICANISM, REGIONAL CONFERENCE OF THE RIO DE LA PLATA, ROADS AND STREETS.

PARDON RACKET. See PRISONS.

PAREGORIC. See NARCOTIC DRUGS CONTROL.

PARI-MUTUEL BETTING. See RACING.

PARKS, National. See NATIONAL PARK SERVICE.

PAROLE. See PRISONS, PAROLE, AND CRIME.

PASCO, Port of. See PORTS AND HARBORS.

PASSPORTS. See REFUGEES; TRAVEL.

PATENT OFFICE, U.S. Searches of pending applications for patent to find in them inventions useful for national defense and requiring concealment from possible enemies were among the new duties imposed on the Patent Office in 1941. By direction of an Act of Congress (Public No. 700) to preserve in secrecy every invention, whether of military significance or of industrial utility, disclosed in an application and to withhold the grant of a patent for it if its publication would be detrimental to the public interest, the Commissioner of Patents created the Patent Office Defense Committee to conduct this quest for mechanisms, chemical compositions, and processes having defensive importance. The members of this Committee are examiners of training and experience equipping them for these duties. The Committee collaborates

with the Army and Navy Advisory Patent Board in determining which applications shall be sequestered. The Committee cooperates also with the Office of Production Management and the Office of Scientific Research and Development.

Another Act of Congress (Public 239), supplementing Public No. 700, has for its object to prevent the sending abroad of information likely to be helpful to potential enemies of the United States. This statute exacts that in every case of the filing abroad of an application covering an invention originating in this country a license must first be obtained from the Commissioner of Patents.

The effect and the benefit of these two laws are that complete custody and control of all technical data contained in applications filed in the United States is vested in the Federal Government, so that no invention of service to this country can be communicated to its potential enemies.

Applications filed in the eleven months, January to December, 1941, numbered 55, 162, compared with 64,480 in the corresponding period of 1940. Receipts during the twelve months from Dec. 1, 1940, to Nov. 30, 1941, were \$3,991,854.19. Expenditures in the same months were \$4,771,092.14. A decline in the number of foreign applications explained in large part the decrease in the volume of new business and in the earnings of the Office.

CONWAY P. COE.

PAYROLLS. See NATIONAL INCOME. Compare topics listed under WAGES.

PEACE AIMS. See ATLANTIC DECLARATION.

PEANUTS. See HAY.

PEARL HARBOR. See HAWAII under *History*, NAVAL PROGRESS; MILITARY PROGRESS, WORLD WAR.

PEMBA. See ZANZIBAR PROTECTORATE.

PENANG. See BRITISH MALAYA.

PENICILLIN. See MEDICINE AND SURGERY under *Chemotherapy*.

PENNSYLVANIA. A middle Atlantic State. Area: 45,333 sq. mi., including 288 sq. mi. of inland water, but excluding part of Lake Erie, 735 sq. mi. Population: (1940 census) 9,900,180. The urban population comprises 66.5 per cent of the total (U.S. average, 56.5 per cent); non-white population, 4.8 per cent (U.S. average, 10.2); elderly (65 years and over), 6.8 per cent. Pennsylvania ranks 32 among the States in area, second in population, and sixth in density, with an average of 219.8 persons per square mile. The capital is Harrisburg with 83,893 inhabitants; largest city, Philadelphia, 1,931,334. There are 67 counties and 92 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Francis B. Huas, Superintendent of Public Instruction, there were 1,855,530 pupils enrolled in the public schools of Pennsylvania during the school year 1939–40, 1,154,465 in elementary schools and 701,065 in secondary schools. Teachers numbered 63,977 and received a median salary of \$1,509. Total expenditures for year were \$225,974,179.

Transportation. State highway mileage in 1939, including streets under State control, totaled 40,512, of which 30,607 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 2,169,702; 1,877,495 were private and commercial automobiles, 5,599 busses, and 262,755 trucks and tractor trucks. Gross motor-fuel consumption was 1,581,975,000 gallons. Net motor-fuel tax receipts were \$62,495,000, the rate being four cents per gallon (Dec. 31, 1940). State

motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$31,891,000.

Railways of all classes extended 10,428 miles (Dec. 31, 1939) 4.44 per cent of the total mileage in the United States. Class I steam railways (5,307 miles) reported 186,501,840 tons of revenue freight originating in Pennsylvania in 1940 and 131,875,294 tons terminating in Pennsylvania. There are 107 airports and landing fields in the State (28 lighted fields) and nine seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 2,169 civil aircraft in the State and 4,109 airline transport, commercial, and private pilots (3,456 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 5,956,200, as compared with 6,035,900 acres in 1940. According to the latest census, there are 169,027 farms, valued at \$864,199,795, averaging 86.3 acres each. Farm population numbered 912,232 or 9.2 per cent of the total. Leading crops with production in 1941 were: Corn, \$44,691,000, 53,203,000 bu.; hay, \$35,406,000, 2,882,000 tons; barley, \$21,241,000, 3,614,000 bu.; wheat, \$17,911,000, 16,897,000 bu.; potatoes, \$17,664,000, 20,540,000 bu.; oats, \$13,902,000, 30,222,000 bu.; commercial truck crops, \$8,935,000; apples, \$3,382,000, 9,313,000 bu.; tobacco, \$7,613,000, 52,518,000 lb.

Manufacturing. The total value of manufactured products according to the latest census (for the year 1939) was \$5,475,925,482. (For details see 1940 YEAR BOOK.)

Mineral Production. The leading mineral products, in order of value, were in 1939 (with 1940 figures in parentheses): Bituminous coal, 92,190,000 short tons valued at \$188,990,000 (112,907 short tons); anthracite coal, 51,487,377 short tons, \$187,175,000; pig iron, 10,057,207 net tons, \$186,302,533 (14,571,517 net tons, \$282,666,561); coke, 12,120,225 short tons, \$49,015,558 (17,412,024 net tons, \$69,599,076); petroleum, 17,382,000 bbl., \$36,200,000 (17,353,000 bbl.); natural gas, 93,882,000 M cu. ft., \$35,268,000; cement (exclusive of natural cement), 24,870,343 bbl., \$34,332,649 (27,499,786 bbl., \$38,350,998); ferro-alloys, 288,078 long tons, \$29,609,712; stone, 15,743,790 short tons, \$16,906,854 (19,277,690 short tons, \$19,855,478); clay products (other than pottery and refractories), \$11,351,849. The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$532,355,651. (Coke, ferro-alloys, and pig iron are eliminated in State totals to avoid duplication.) Pennsylvania is second only to Texas among States in the value of mineral production, with 12.57 per cent of the total value for the United States.

Trade. According to the 1940 census there were 11,450 wholesale establishments in Pennsylvania, employing 98,972 persons, reporting net sales for 1939 of \$3,347,488,000 and annual pay roll of \$169,140,000. There were 134,543 retail stores with 348,390 employees, reporting sales of \$3,133,377,000 and pay roll of \$338,718,000. Service establishments numbered 45,149, employing 61,959 persons for \$60,830,000 per year, and reporting a business volume amounting to \$213,100,000. The leading business center of the State is Philadelphia which reported sales of \$1,622,100,000 wholesale and \$766,622,000 retail. Philadelphia County, which is coextensive with the city of Philadelphia, is the leading county in the volume of receipts for its service establishments (\$78,441,000). Pittsburgh reported sales of \$832,069,000 wholesale and \$337,622,000 retail.

Social Security and Relief. In the calendar year 1940

the total cost of assistance to needy persons in Pennsylvania was \$249,147,000. Under the Social Security program, financed by Federal funds matching State grants, 103,567 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$22.43 (U.S. average pension, \$21.08); 158,348 dependent children in 63,360 families received average monthly payments of \$36.92 per family (U.S. average, \$32.73); and 13,656 blind persons received (without Federal aid) a total payment of \$407,286. General relief cases, which are supported by State and local funds only, numbered 123,071 and received \$19.32 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 11,775 (\$780,000); NYA student work program, 24,239 (\$158,000); NYA out-of-school work program, 21,295 (\$468,000); WPA, 93,018 (\$5,790,000); other Federal emergency projects, 185 (\$14,000); regular Federal construction projects, 40,026 (\$6,275,000). The Farm Security Administration certified subsistence payments totaling \$12,000 for the month to 456 cases.

Legislation. The General Assembly convenes in regular session on the first Tuesday of January in odd years. It is composed of 50 Senators (18 Democrats and 32 Republicans in 1941) and 208 Representatives (126 Democrats and 82 Republicans).

The 134th Legislature ended a 193-day session, the longest in 99 years, at 6:10 a.m. on July 18th; 347 Acts were approved. In a summary of 1941 legislation (see *47th Annual Report*, Penn. Bar Assn., pp. 460-490) Herbert B. Cohen, Director of the State Legislative Reference Bureau, pointed out that, for the first time within the history of the Commonwealth under the 1874 Constitution, the majority in the House of Representatives was of different political persuasion from that of the Governor. The session was thus hampered "not only by the lack of access on the part of the House to the administrative departments in the formulation of a legislative program in contradistinction to that suggested by the Chief Executive, but also by the fact that the Governor sincerely felt that the separation in functions existing between the executive, the legislative, and the judicial bodies should be strictly maintained."

Climax of the disagreement between Democrats and Republicans came in the final all-night session when a reapportionment measure, sponsored by Democrats, was defeated by one vote; in order to reduce the number of Congressional districts from 34 to 33, as required by results of the 1940 census, the Democrats had proposed eliminating a heavily Republican district. It seemed likely that this subject would be dealt with in a special session prior to the 1942 elections, but none had been called by the end of the year.

Long debate developed before financial legislation could be enacted, and little change was made in the tax structure of the State; legislation consisted chiefly in the extension for two years of a number of existing special taxes. Labor achieved only slight amendments to the Occupational Disease and Workmen's Compensation Acts. Charter reform for Philadelphia was among a number of important proposals abandoned because of disagreement among the legislators.

An exception to the failures of the session was quick enactment of the defense legislation advocated by the Governor. A State Council of Defense, with cooperating local and district councils, was

established, and a Pennsylvania Reserve Defense Force was created to serve while the State National Guard is in active military service. The rights of persons in military or naval service were protected by provisions for voting and registering by mail and for renewing licenses which lapse during service. Maintenance of bridges and viaducts on highways designated as "defense highways," and vocational training for defense with use of Federal funds, were provided for. Two measures were designed to prevent subversive activities: Any group advocating overthrow of the government by force could not be classed as a political party or file nominations; and any person advocating subversive doctrines was prohibited from holding public office. (The latter act included a dismissal procedure.)

The National Conference of Commissioners on Uniform State Laws scored heavily, with seven of their drafts adopted in the 1941 session. Other achievements were: a new Unfair Sales Act and new legislation on deficiency judgments, to substitute for legislation previously pronounced unconstitutional; amendments to the law on orphans' courts, decedent estates, and adoption; new regulations for employment agents; and a voluntary quota plan for anthracite mining, aimed at bootlegging. Employers were prohibited from selling their employees any merchandise not produced by or related to their business, however, no damages may be assessed for violation. A "Little WPA Act" authorized the Department of Public Assistance to contribute to labor costs and cooperate in work relief projects approved by the Governor and submitted by departments of the Commonwealth or by subdivisions thereof. The Governor vetoed a new marriage code which would have invalidated common law marriages and would have required special licenses for persons under 18 (previously under 16).

Finances. Total tax collections in Pennsylvania for the fiscal year ending in May, 1940, were \$337,326,000. Total sales taxes amounted to \$83,290,000, including motor fuel, \$47,008,000. Taxes on specific businesses ran to \$66,171,000, general and selective property, \$22,007,000, unemployment compensation, \$82,376,000. The net income taxes were \$23,777,000 (1941: \$84,919,000). Cost payments for the operation of general government totaled \$353,224,000 in 1939, the latest year available. (Revenues for the general government for that year were \$390,317,000.) Cost of operation per capita was \$35.84. Total gross debt outstanding in 1941 was \$205,365,000, as compared with \$88,306,000 in 1932.

Officers and Judiciary. The Governor is Arthur H. James (Rep.), inaugurated in January, 1939, for a four-year term, Lieutenant Governor, Samuel S. Lewis; Secretary of State, Sophia M. R. O'Hara; Attorney General, Claude T. Reno; State Treasurer, F. Clair Ross; State Auditor, Warren R. Roberts. Chief Justice of the Pennsylvania Supreme Court is William I. Schaffer; there are six associate members elected by popular vote for 21-year terms. See FLOODS; PRISONS, PAROLE, AND CRIME CONTROL.

PENOLOGY. See PRISONS, PAROLE, AND CRIME.

PENSIONS. For old-age pensions, see LABOR LEGISLATION; SOCIAL SECURITY BOARD; articles on States. For veterans' pensions, see VETERANS' ADMINISTRATION.

PERAK. See BRITISH MALAYA.

PERIM. See ARABIA under *Aden*.

PERLIS. See BRITISH MALAYA.

PERMANENT COURT OF INTERNATIONAL JUSTICE. See WORLD COURT.

PERMANENT JOINT BOARD ON DEFENSE. See CANADA.

PERSIA. See IRAN.

PERU. A republic on the west coast of South America. Capital, Lima.

Area and Population Area, variously estimated at from 430,000 to 482,100 square miles, excluding more than 100,000 sq. mi. in dispute between Peru and Ecuador. The national census of June 9, 1940, showed 7,023,111 inhabitants (6,207,967 actually enumerated and 815,144 added to cover the estimated number uncounted and possible omissions). Of those actually counted, 3,067,868 were men and 3,140,099 women. There were 3,283,360 whites and mestizos, 2,847,196 Indians, 41,945 Negroes, 29,054 Orientals, and 6,412 unclassified. Populations of the chief cities were: Lima, 522,826 in 1940; Callao, 75,000 in 1936; Arequipa, 46,000 in 1936; Cusco, 40,000 in 1936; Iquitos, 40,000 in 1936.

Defense. Military service is compulsory, but the number of conscripts is limited. As of Jan. 1, 1941, the active army was estimated at 14,551; trained army reserves, 470,895; active air force, 1,935; police and gendarmerie, 8,000. The navy comprised 2 obsolete cruisers, 2 destroyers, 1 torpedo boat, 4 submarines, 7 river gunboats, and 3 auxiliary craft. The armed forces were instructed by U.S. naval, aviation, and military missions. Defense appropriations were 19 per cent of the 1941 budget.

Education and Religion. About half the population is illiterate. Education statistics for 1937 showed 4,697 primary schools with 471,304 pupils, 147 secondary schools with about 22,474 students, 7 normal schools with 649 students, 26 vocational schools, and 5 universities, with some 4,500 students. The Roman Catholic Church is protected by the State and only Roman Catholic religious instruction is permitted in State and private schools.

Production. Agriculture supports 85 per cent of the population. Stock raising and mining are other leading occupations. Mineral products accounted for 60.5 per cent of all 1940 exports by value; agricultural products, 30.2 per cent. Minerals produced in 1940 were (preliminary, metal content in metric tons): Copper, 38,557; antimony, 896.2; bismuth, 382.6; manganese, 221.8; silver, 573.8; lead, 37,072; magnesium, 36.9; tungsten trioxide, 179.6; vanadium, 2,166.6; molybdenum concentrates, 337; zinc concentrates, 3,588; refined zinc, 178.3. Gold output was 8,963 kilograms; petroleum, 13,427,000 bbl. The 1940 cotton crop was 83,030 metric tons; sugar (exports), 301,954 metric tons; wheat, 3,858,000 bu.; flax, 300 metric tons of fiber in 1940-41. Rice, coffee, and fruits are other important crops. Wool exports in 1940 were 5,993 gross tons. There are estimated to be 11,048,350 sheep, 1,850,000 cattle, 400,000 horses and mules, 650,000 goats, 1,169,000 alpacas, 650,000 llamas, and 800,000 swine. Guano collections in 1939 were 152,788 tons. Chief manufactures: petroleum products, cotton textiles, knit goods, hats, food products, beverages, leather, shoes, etc.

Foreign Trade. Including specie, imports in 1940 were 318,739,462 soles (255,787,376 in 1939); exports, 405,813,523 (381,421,389 in 1939). In U.S. dollars, the 1940 imports were \$51,668,000 (\$47,960,000 in 1939); exports, \$65,782,000 (\$71,517,000). Values of leading 1940 exports (in 1,000 soles): Copper bars, containing gold and silver, 75,021; cotton, 70,788; crude petroleum, 53,883; oil products, 46,937; sugar, 43,604; gold bars, 24,245; wool, 20,137. The United States furnished 53.1 per cent of the 1940 imports (41.1 in 1939); Great Britain, 9.2 (8.4); Argentina, 7.8

(5.4). Of the exports, the United States took 42.9 per cent in 1940 (30.4 in 1939); Great Britain, 12.1 (19.6); Chile, 10.1 (7.8). See TRADE, FOREIGN.

Finance. The trend of the budget and public debt since 1932 is shown in the accompanying table from *Commercial Pan America*, April-June, 1941, p. 291.

ORDINARY BUDGET ACCOUNT^a
[In millions of soles]

Year	Revenues		Expenditures		Public debt Dec. 31
	Budget	Actual	Budget	Actual	
1932 ..	96.9	86.5	96.9	95.9	551.6
1935 ..	131.3	139.7	131.3	137.6	690.4
1936 ..	139.7	159.6	139.7	155.1	706.7
1937 ..	153.6	172.9	153.6	168.0	723.7
1938 ..	165.5	184.5	165.5	183.5	778.3
1939 ..	174.7	179.9	174.7	185.0	833.1
1940 ..	188.0 ^b	184.5	188.0 ^b	194.5	905.5
1941 ..	214.2 ^b	—	214.2 ^b	—	925.8 ^c

^a Excluding 28,000,000 soles of revenue and expenditure under special laws, incorporated in budget for the first time in 1940. ^b Excluding 64,200,000 soles of revenue and expenditure under special laws. ^c On June 30, 1941.

The sol (nominal par value, \$0.474) depreciated to an average of \$0.1875 in 1939 and \$0.1621 in 1940.

Transportation. Peru in 1941 had about 2,760 miles of railway line (over 600 miles state-owned), 16,559 miles of highways, and an extensive network of airways operated by five companies (one national). With the completion of the new port of Matarani in southern Peru early in 1941, a contract was let for a railway line connecting the new port with La Joya station of the Southern Railway. Shortly after Peru expropriated the Deutsche Lufthansa system on Apr. 1, 1941, Pan American Grace Airways stepped up their services between Peru and Argentina to five weekly (see *History*). Traffic on all air lines in Peru in 1940 was: Passengers, 28,274; kilometers flown, 3,100,015; freight, 694,256 kilograms, mail, 59,117 kilograms; parcel post, 36,096 kilograms. During 1939 a total of 11,616 ships of 16,458,369 tons entered Peruvian ports.

Government. The Constitution of Apr. 9, 1933, as amended by the plebiscite of June 18, 1939, vested executive power in a President elected for six years and ineligible for re-election. Legislative authority was vested in a Senate of 40 and a Chamber of Deputies of 140 members, all elected for six years. The suffrage in national elections is restricted to literate males of 21 years and over. President in 1941, Dr. Manuel Prado y Ugarteche, who was elected Oct. 22, 1939, and inaugurated December 8. Most of the government candidates for the Senate and Chamber of Deputies were successful in the 1939 elections as the strongest opposition group, the so-called Apra party, was forbidden to present candidates (see 1939 YEAR BOOK, p. 609).

HISTORY

Conflict with Ecuador. The conflict with Ecuador is described in the article on ECUADOR under *History*. Provoked by Ecuadoran charges of totalitarianism in Peru, the Congress at Lima on July 13 unanimously passed a declaration of adherence to democratic principles and of protest against Ecuador's "aggression." On August 7 President Prado in a message to President Roosevelt pledged his Government to work for the restoration of normal and peaceful relations with Ecuador. By the year's end, negotiations had advanced to the point where settlement of the boundary controversy was anticipated at the forthcoming conference of American Foreign Ministers in Rio de Janeiro (see PAN AMERICANISM).

Relations with United States. Incidents dampening Peru's cordial relations with the United States arose in connection with the Ecuadoran-Peruvian controversy. The transfer to Ecuador of two U.S. coast guard vessels while this controversy was in a heated stage aroused vigorous protests in the Lima press and provoked student demonstrations. Secretary Hull explained that the transfer of the ships had "no relation whatsoever to the proffer of good offices" by the United States. Application of the U.S. blacklist to pro-Axis firms and individuals in Peru also caused some resentment in Lima.

The War Department in Washington on October 15 seized a shipment of 18 American war-planes, valued at \$1,234,000, which had been purchased by Peru from the Norwegian Government-in-Exile and were on the point of being sent from New York to Callao. The planes were requisitioned for defense purposes and reportedly turned over to Russia. The Peruvian Government protested this diversion and Col. Armando Revoredo, air attaché at the Peruvian Embassy in Washington, announced his resignation. He denounced the seizure as "a most unfriendly act." The Congress and press of Peru joined in criticism of the seizure. Secretary Hull promised full and immediate compensation for the planes and explained that the requisitioning was made necessary by the "critical world situation." A month earlier the United Fruit Company protested to Washington that Peruvian planes had bombed some of its banana plantations in Ecuador, firing at the house of an American manager from which an American flag was flying.

These irritations were more than offset by the steady development of closer economic, military, and cultural contacts between the two countries. At the request of the Peruvian Government, experts of the Fish and Wildlife Service, U.S. Dept. of Interior, went to Peru in January to assist in a survey of fishery resources. Other U.S. Government experts aided in the rehabilitation of the Peruvian rubber-growing industry. Peruvian officers trained with U.S. defense forces in the Panama Canal Zone and the United States. In mid-May Capt. W. M. Quigley, U.S.N., head of the naval mission to Peru, was appointed Chief of Staff of the Peruvian Navy. There was a lively cultural exchange, featured by the large attendance of Americans at the summer school of the University of San Marcos.

The expansion of U.S. purchases of Peruvian products, particularly copper and sugar, was a major factor in Peru's successful adjustment to the loss of European markets (see TRADE, FOREIGN). Due to maintenance of a substantial favorable trade balance, the Banco Central of Peru found it unnecessary to draw upon the \$10,000,000 currency-stabilization loan advanced by the Export-Import Bank of Washington Dec. 9, 1940. Under an arrangement announced in Washington October 2, Peru agreed to sell all of its antimony, copper, lead, tungsten, vanadium, and zinc output to the United States. The U.S. Metals Reserve Co. undertook to buy all these metals not purchased by private American business concerns.

Japanese Funds Frozen. President Prado, Vice President Rafael Larco Herrera, and other leading Peruvians repeatedly affirmed their adherence to the program of inter-American solidarity and support of President Roosevelt's good neighbor policy. On the same day Japan attacked the United States, President Prado in a message to President Roosevelt said that Peru would give the United States every assistance in measures which Washington deemed necessary to meet the Japanese threat. De-

crees issued December 9 froze Japanese funds and securities in Peru and banned import and export of Japanese goods without special license. Severance of trade with Japan closed an important market for Peru's cotton and minerals. On November 14 Peru had agreed to pay Japan an indemnity of 1,400,000 soles for damage to Japanese residents and properties in the anti-Japanese riots of May, 1940, in Lima.

Anti-Axis Measures. During the year the Government placed increasing restrictions upon German and Italian propaganda and political activity in Peru. On April 1 the Peruvian branch of the German-controlled Lufthansa air network was closed and the German Transocean news agency was barred for "spreading news that may disturb the good international relations of Peru." Congress authorized cancellation of the Lufthansa concession in January, after the company had been fined for flying over the Ecuadoran frontier without authorization. Actual seizure of the air line was precipitated by the scuttling of two German freighters in Callao harbor and the flight of two other Nazi merchant ships on March 31 without clearance papers, following news of the seizure of Axis ships in United States ports. Assets of the companies owning the four Nazi ships were seized, while the crews were interned. The remaining German air line (Sodta) was soon forced to suspend operations.

Dissemination of propaganda in favor of any belligerent country was banned by the Government June 28. On August 2 the Government withdrew the diplomatic immunity granted German diplomatic pouches because they had been used "for purposes other than the transport of official correspondence." Later that month the Chamber of Deputies voted adherence to the Roosevelt-Churchill Atlantic Declaration (q.v.) and invited American parliamentary bodies to unite in defense of democracy. Propaganda organs of the Spanish Falange and of the Italian Legation in Lima were suppressed for anti-democratic tendencies August 20. On December 18, the Senate unanimously requested the Government to curb the activities of Axis nationals in Peru.

Other Developments. The Foreign Ministers of Chile and Peru on February 7 initialled three pacts coordinating their foreign and defense policies and opening the way for a new trade agreement (see CHILE under *History*). Highway agreements were concluded with Bolivia and Chile at a highway conference in Buenos Aires in May.

The internal political situation was marked by the relative inactivity of the Apra and other opposition groups and by an undercover struggle between liberal and conservative elements within the government coalition. An anti-government plot, organized by a group of army and police officers, was broken up early in the year by a raid on a meeting of the conspirators during which two police officers were killed. More than 500 lives were lost and the entire residential section of the town of Huaraz was wiped out by a great water-slide on December 13.

See ARGENTINA and CHILE, under *History*; CHEMISTRY, INDUSTRIAL; LEND-LEASE ADMINISTRATION, SOCIALISM.

PETROLEUM. The petroleum industry in 1941 broke even 1940's record-breaking records, according to the annual report of the American Petroleum Institute, and this in spite of the war which put exports at a minimum and taxes at a maximum. Domestic crude oil production climbed to a total of

1,405,218,000 bbl. compared with 1,353,214,000 bbl. in 1940. The rest of the world combined produced only 809,399,000 bbl., or 14,149,000 less than in 1940. Consumption reached the highest figure in petroleum history, which covers a period of 80 years. Domestic consumption of petroleum and petroleum products was about 1,478,697,000 bbl. Exports fell to 105,900,000 bbl.; total demand, 1,584,606,000 bbl. By the end of 1941 crude petroleum was being produced in the United States at the rate of more than 4,100,000 bbl. a day. And the nation's requirements were rising so stringently that the demand for mid-1942 was estimated at a daily 4,500,000 bbl., with an anticipated 5,000,000 a day by July, 1943.

The war was the cause of everything: the extraordinary demand, the high taxes, the low export figures. Although the entry of the United States in the war will cause exports to drop still lower in 1942, the demand was expected to leap ahead because of the rising requirements of the United States armed forces and the merchant marine. The Navy, Army, the air forces, and Coast Guard used a total of some 30,000,000 bbl. of oil in 1941. Total consumption of petroleum and petroleum products in 1938 by the Army, Navy, and Coast Guard was 11,536,645 bbl. Of this amount the Navy took 9,068,000 bbl. But Navy requirements in 1941 mounted to 16,000,000 bbl. of fuel oil and about 3,000,000 bbl. of other petroleum products. Army consumption also took a jump to 5,000,000 bbl. of motor fuel (not counting aviation gas) against only 800,000 bbl. in 1940. In addition the Army consumed still another 5,000,000 bbl. of oil products, including aviation gasoline. The Coast Guard consumed about 550,000 bbl. in 1940 and '41 each. The needs of the United States military forces for 1942 were estimated at about 50,000,000 bbl., possibly 60,000,000. But no shortage was predicted as long as the industry could maintain its 4,000,000-bbl. daily rate.

The production of high-test aviation gasoline rose 33½ per cent. about 18,650,000 bbl. in 1941, 14,000,000 in 1940. Domestic demand was about 13,500,000 bbl., 6,570,000 in 1940. Exports were 4,800,000 bbl. against 4,700,000 in 1940. Both production and distribution were put under government control in 1941, and very early in 1942 all oil produced in California was taken over by a government commission.

The demand for motor fuel oil rose 11½ per cent in 1941 over 1940: 683,363,000 bbl. compared with 614,531,000 in 1940. This includes the aviation gasoline figures. After the Lend-Lease Act was passed (March, 1941) England purchased large amounts of motor fuel oil, especially from the Gulf area. Eighty tankers of 10,000 tons each were transferred to British use, resulting in the motor-oil-shortage scare on the Atlantic coast in the spring and summer. No actual shortage did occur, however. Other means of transportation were rushed into service and three pipe lines were built to keep the area supplied. The third line was completed Jan. 15, 1942. See also PETROLEUM COORDINATOR.

Stocks of motor fuel oil at the end of 1941 were about 88,000,000 bbl., including 6,660,000 bbl. of aviation gas, compared with 84,400,000 bbl. at the end of 1940, which figure included 6,350,000 bbl. of aviation gas. Stocks of crude oil were about 250,000,000 bbl. on December 31, compared with 275,985,000 in 1940. The 1941 domestic demand for fuel oil was 382,700,000 bbl. (337,300,000 in 1940). Exports were 1,000,000 bbl. less than in 1940. Stocks too were less: 82,200,000 bbl. compared with 88,026,000 at the end of 1940. Light

fuel oil had a somewhat different story: the demand was for 174,500,000 bbl. against 160,800,000 in 1940; exports fell only 600,000 bbl. and stocks at the end of the year were 51,600,000 bbl.,—8,700,000 more than 1940's year-end stocks.

Consumption of lubricants in 1941 increased 27 per cent over 1940 to 31,217,000 bbl. Stocks were 1,000,000 bbl. less. Total stocks of refined petroleum products were about 300,000,000 bbl. on Dec. 31, 1941, approximately the same amount as stocks on hand the first day of the year. Gasoline taxes in 1941 amounted to \$1,335,000,000: \$965,000,000 throughout the 48 States, a 12 per cent increase; \$370,000,000 for the Federal government, a 31 per cent increase.

With the fate of the nation (and the United Nations) hanging on petroleum and its products, The U.S. Bureau of Mines (q.v.) launched a rapid, intensive survey of the quantity and geographic distribution of crude oils suitable for the manufacture of aviation gasoline. The survey revealed that a number of oil fields were potential producers of aviation gasoline which had not heretofore been producing that type of crude oil. The Bureau continued to develop methods of extracting gasoline and lubricating oil from domestic coals as a safety measure against any as yet unforeseen but possible petroleum shortage.

The petroleum industry handled almost the entire 1941 production of toluene, for which the last T in TNT is the symbol. High grade aviation gas is a by-product of toluene synthesis. It was discovered that toluene could be produced from petroleum for about 25¢ a gal., whereas toluene from coal-tar, hitherto the usual source, cost 27–30¢ a gal. to make.

See the oil-producing States and countries under *Production and History*; BUSINESS REVIEW under *Minerals*; CHEMISTRY, INDUSTRIAL under *Fuels*; CONSUMERS' COOPERATIVES; MINES, BUREAU OF; UNITED STATES under *Congressional Investigations* For gasoline taxes, see *MOTOR VEHICLES*; for pipe-lines, see *AQUEDUCTS*.

PETROLEUM COORDINATOR FOR NATIONAL DEFENSE, Office of. This office was created by President Roosevelt on May 28, 1941, by executive authority that was his by reason of the unlimited national emergency that was declared on May 27. Its purpose, as stated by the President, is "the development and utilization, with maximum efficiency, of our petroleum resources and our facilities, present and future, for making petroleum and petroleum products available, adequately and continuously, in the proper forms, at the proper places, and at reasonable prices to meet military and civilian needs."

The President appointed the undersigned as Petroleum Coordinator and authorized him: (1) To obtain from Federal and State agencies, and from the petroleum and allied industries, information as to (a) the military and civilian needs for petroleum and petroleum products, (b) the factors affecting the continuous, ready availability of petroleum and petroleum products for those needs, and (c) any action proposed which will affect such availability of petroleum and petroleum products. (2) To make specific recommendations to any Federal or State agency and to industry as to action necessary to insure the maintenance of a ready and adequate supply of petroleum and petroleum products.

The Petroleum Coordinator was instructed by the President to consult with Federal and State agencies so that all governmental participation should consistently further this policy; and to consult with the petroleum and allied industries in order to aid them

in shaping their policies and operations in the discovery, development, production, processing, storage, distribution, marketing, consumption, import, and export of petroleum and petroleum products.

Even before our active engagement in the war, it had become evident that no more important problem confronted the office and the oil industry than that of increasing the nation's production of 100-octane aviation gasoline to a level adequate to our needs for defense. Therefore, four months before the Japanese attack, the Petroleum Coordinator called upon the industry to act at once to double and then to treble its output. Even more 100-octane gasoline is now indicated as being necessary. During the late summer and fall, this program had made substantial progress.

In order to assure full and continuing consultation with the best brains of the industry, both executive and technical, the Coordinator created, before the war, the Petroleum Industry Council for National Defense, composed of 66 outstanding leaders from all parts of the country, representing both large and small producers, refiners, and marketers, and also including trade associations and cooperatives (after the war began, its name was changed to the Petroleum Industry War Council).

When war began, therefore, the machinery for harnessing the great petroleum industry to military effort was already set up. To expedite the 100-octane program, the Office of Petroleum Coordinator took these actions: (1) Obtained from the Supply Priorities and Allocations Board the ruling that all applications for new 100-octane plants would be given A-1-A ratings; (2) made a nationwide survey of refinery capacity and obtained complete data on present and potential capacity; (3) worked out with manufacturers a program for the quickest possible deliveries of materials and equipment for new refineries; (4) got patent owners to cut in half their royalties on the complicated processes used in making 100-octane, thus permitting other refiners to make this fuel; (5) obtained Department of Justice approval for pooling operations by oil companies so that patents, processes, raw materials, and facilities could be made cooperatively available; and (6) invoked full control over 100-octane gasoline and its components so that none would be diverted to non-essential purposes.

The net result of all of these cooperative Government-industry activities was the accomplishment, in a very brief time, of far more progress in 100-octane production than many had deemed possible.

Long before the coming of war, the Office of Petroleum Coordinator had difficult problems with which to cope. At the very moment of its creation, in May of 1941, it had been confronted with a transportation deficiency in the 17 States of the Atlantic Seaboard, which normally receive about 95 per cent of their oil by tank ship, principally from the Gulf Coast. More than 50 of these ships had been diverted to a shuttle service between the Gulf and ports north of Cape Hatteras as part of the aid-to-Britain program. The resultant alarming shrinkage in East Coast stocks made it necessary to institute conservation measures, including the voluntary closing of filling stations between 7 p.m. and 7 a.m. and an order (issued through the Office of Price Administration and Civilian Supply) cutting supplies to filling stations by ten per cent.

Meanwhile, through continuing efforts of this office, there was built up a comprehensive substitute transportation program which included an unprecedented use of railroad tank cars, the heavier loading of tankers, and many other measures. These combined efforts, plus abnormally warm weather

which drastically cut fuel oil consumption, resulted in a substantial building up of stocks in the East. So, when the British were able to return part of the diverted tankers, it was possible to remove all restrictions on the use of petroleum products.

The Coordinator, soon after his appointment, named industry committees to consult and advise with his office on all phases of activity. Since the creation of the Petroleum Industry Council, these committees have been occupied principally with district problems of production, refining, transportation, and marketing. The Office has steadfastly taken the view that there shall be no action or policy on its part which will change the competitive position of anyone in the oil industry. See GAS INDUSTRY.

HAROLD L. ICKES.

PHENOTHIAZINE. See AGRICULTURE, U.S. DEPARTMENT OF under *Animal Industry Research*, ENTOMOLOGY, ECONOMIC.

PHILADELPHIA MUSEUM. See ART.

PHILANTHROPY. The soaring contributions for foreign relief, which had been the striking characteristic of charitable activities in 1940, took a downward plunge in 1941, with total collections dropping probably by about half. (See WAR RELIEF.) They were supplanted somewhat in public interest by a rash of enterprises more intimately connected with the American picture. Early in the year, the most prominent place in the press was occupied by a group of organizations advocating one course or another for our political future. Their collections of funds, which ran in a number of instances into six figures, might be labelled more properly for propaganda than for philanthropy; disbursements went to full-page newspaper advertisements, bombardment of the public by mail, mass meetings of huge proportions, and similar channels.

As the United States knuckled down to the problem of defense and, finally, of actual war, war organizations came more and more to the front. The Red Cross (q v) launched a \$50,000,000 drive and reported \$10,780,341 collected by the end of the year. The United Service Organizations collected \$13,513,043 by the end of November. A number of lesser organizations sprang up, and most existing ones turned at least a part of their resources to the war effort. (See the U.S.O. and other groups under SOCIETIES; also, articles on churches.) Hardly a matter of philanthropy, but the subject of wide appeal to the public, was the campaign for purchase of defense savings bonds and stamps (see PUBLIC FINANCE).

Whether as a result of these special activities, or because of improved economic conditions, there seems to have been a considerable acceleration in giving in 1941. According to the most comprehensive summary statistics (compiled by the John Price Jones Corporation and reported in the quarterly *Giving Today*) publicly reported gifts and bequests in the seven largest cities of the United States totaled \$129,860,430 in 1941 as compared with \$77,720,834 in 1940. Bequests particularly showed a great increase—to \$58,473,657 from \$15,723,127—partly because of the distribution of one great estate, that of Frederick W. Vanderbilt of New York City (see below under *Individual Gifts*). Leading categories were: Education, \$57,494,408; organized social work, \$41,724,468; health, \$8,637,814; fine arts, \$2,751,390; religious purposes, \$2,734,939; foreign relief, \$7,345,934 (as compared with \$14,933,591 in 1940); American war organizations, \$8,790,950. (Above figures exclude contri-

butions reported on a national basis such as the \$13,513,043 raised by the U.S.O., and \$10,780,341 by the Red Cross during December, 1941.)

A problem which always concerns the giver of gifts is that of ascertaining whether or not his contribution will be wisely used. The National Information Bureau (see under SOCIETIES) serves philanthropists by investigating charitable causes. Organizations collecting for relief of foreign belligerents are subject to the requirement that they register with the Department of State and submit detailed reports which appear in published form. Also of interest in this connection in 1941 was the close examination, undertaken by the New York City Department of Welfare, of 50 organizations collecting considerable sums from pedestrians. The investigation followed a decision in the Appellate Division to the effect that the State may dissolve a corporation created by it; the case involved the Volunteer Rescue Army, Inc., which operated on a national scale and paid out only \$10 or \$15 a week to the needy.

Fund Raising Campaigns. Education fared better than usual in 1941, with collections in the seven large cities mentioned above tripling those of 1940. In addition to the usual collections and grants (see table under UNIVERSITIES and below under *Foundation Activities*) a number of institutions reported special activities. Vassar College reached its 75th anniversary goal of \$2,000,000 in March with three-fourths of the amount contributed by former students. The University of Chicago 50th anniversary campaign brought in \$6,080,000 by September, the Fordham University Centenary drive \$525,000 as of November 7, the Stanford University 50th anniversary, \$1,572,251, and the Medical Unit of New York University, \$198,415 for its centenary. Allegheny College, Meadville, Pa., undertook to raise \$900,000 for its 125th anniversary, and Tufts College secured \$500,000 in a special campaign. A special project of Harvard University was the establishment, in cooperation with the Red Cross, of the Harvard Public Health Unit in England with a fund of \$100,000; study and control of communicable diseases was the object. The Rochester Athenaeum and Mechanics Institute raised \$750,000 to expand its "occupational-training program."

Designed as memorials, there were under way during the year a \$3,000,000 campaign for the Cardinal Hayes Memorial High School in New York and a Paderewski Testimonial Fund, which reported \$84,000 collected in November. The now familiar "President's Birthday Ball" for the Warm Springs Foundation (see below) raised \$2,241,457 in 1941. The usual individual hospital drives reported success, and the United Hospital Fund totaled \$1,000,210 for 1941. Two symphony orchestras, the St. Louis and the National, collected approximately \$100,000 each.

A rather unusual project was the \$415,000 raised by duck hunters in the past three years to improve a million acres of duck breeding grounds provided by the Canadian government. The motion picture industry joined the ranks of those providing well for its indigents by instituting a Motion Picture Relief Fund; \$800,000 was reported on March 29. For the activities of various specific organizations, see SOCIETIES and separate articles, as COMMUNITY CHESTS.

Individual Gifts and Bequests. The following list names, in order of magnitude, the beneficiaries, during 1941, of individual gifts and bequests amounting to a half-million dollars or more. The information is derived from *Giving Today*, a quarterly report issued by the John Price Jones Corp.

Yale University: Bequest of \$13,797,660 for the Sheffield Scientific School from Frederick W. Vanderbilt of New York City

Vanderbilt University: Bequest of \$10,348,245 from Frederick W. Vanderbilt of New York City.

Boy Scouts of America: Gift of a 23-story building in Tulsa, Okla., valued at \$5,000,000 together with a 91,538 acre ranch in New Mexico from Waite Phillips, Tulsa, Okla.

Harvard University: Bequest of the Ritz-Carlton Hotel and its site, assessed at \$3,675,000, from Robert Walton Goslet, New York City

Salvation Army: Bequest of \$3,449,415 from Frederick W. Vanderbilt of New York City

Alonzo Mather Aged Ladies' Home: Established on the shores of Lake Michigan, Chicago, by a bequest of \$3,000,000 in the will of Alonzo Clark Mather of Highland Park, Ill.

Boys Club of New York: Bequest of \$2,643,090 from Victor Morawetz, New York

MacMurray College: Gift of \$2,500,000 from James E. MacMurray, South Pasadena, Calif., bringing his gifts to the college to a total of \$4,191,030.

Northwestern University: Grant of \$1,745,000 from the Clara Abbott Foundation, Chicago, Ill.

New York Association for Improving the Condition of the Poor: Bequest of \$1,724,707 from Frederick W. Vanderbilt of New York

Dartmouth College: Bequest of \$1,569,648 from the estate of William N. Cohen of New York City, who died in 1938

College of Wooster (Ohio): Bequest of \$1,400,000 from Burton E. Babcock, Canandaigua, N.Y.

Medical Society of South Carolina: Bequest of \$1,321,545 from Victor Morawetz, New York

Eugene H. Hughes Memorial Hospital for Contagious Diseases, Hamilton, Ohio: To be established with \$1,000,000 from the estate of Eugene H. Hughes

Northwestern University: Bequest of \$1,000,000 from the estate of Mrs. Emma H. Morrison

University of California: Bequest of \$1,000,000 from the will of Michael J. Connell, Los Angeles

University of Chicago: Grant of \$1,000,000 from the Clara Abbott Foundation, Chicago, Ill.

University of Rochester: Bequest of \$925,164 from Mrs. Bertha H. Buswell, New York

University of Nebraska: \$850,000 from Don L. Love for a library building.

Metropolitan Museum of Art: Bequest of property valued at \$815,000 from George Blumenthal, New York

Harvard University: Bequest of \$750,000 from Frank Graham Thompson, Philadelphia

Cornell University: Gift of \$700,000 from Franklin W. Ohn of Alton, Ill., for construction of a chemistry building in memory of his son

Phillips Academy, Andover, Mass: Bequest of \$700,000 under the will of Thomas Cochran of New York

Emory University School of Medicine: Gift of \$550,000 from the Joseph B. Whitehead Foundation

Federation for the Support of Jewish Philanthropic Societies: Bequest of \$534,316 from the estate of James Ulmann of New York

Stanford University: Bequest of an estate valued at \$500,000 to \$1,000,000 from Mrs. Timothy Hopkins, Menlo Park, Calif.

Dartmouth College: Bequest of \$500,000 from Emil Boomer, Brooklyn, N.Y.

Greenwich (Conn.) Hospital: Gift of \$500,000 from Mrs. Henry W. Bagley of Greenwich, matched by \$500,000 from the community

McCullough Memorial Hospital, Oxford, Ohio: To be erected by a bequest of \$500,000 from Daisy M. McCullough of Oxford to the village of Oxford

Post Graduate Hospital, New York: Bequest of \$500,000 from the will of Gertrude S. Thomas of New York.

The Vatican, Rome: Gift of a Florentine Villa valued at \$500,000 from Myron C. Taylor, New York.

Foundation Activities. An important addition to the list of benevolent foundations and trusts in 1941 was the James Foundation (see below). Activities of the wealthier of these organizations, in so far as they choose to make public their reports, are briefly described below.

Automotive Safety Foundation is supported by annual contributions from more than 150 companies in the automotive industry. Organized in 1937 to carry on a broad, integrated highway safety program, the Foundation made grants in 1941 to 14 qualified national organizations for specific activities in the fields of legislation, motor-vehicle administration, enforcement, engineering, education, training of personnel, and research. President: Paul G. Hoffman. Director: Norman Damon. Headquarters: the Tower Building, Washington, D.C.

Bamberger Foundation. See ADVANCED STUDY, INSTITUTE FOR.

Bok Foundation, The Mary Louise Curtis, has as its principal activity the support of the Curtis Institute of Music in Philadelphia. Grants have also been made to the Settlement Music School, Philadelphia, and the Research Studio, Maitland, Fla., the latter being a kind of "laboratory" for painting. Financed by gifts of \$12,500,000 from Mrs. Mary Louise Curtis Bok, the Foundation was created in 1931 for the support of music, fine arts, science, invention, or general education. Address: 1726 Locust Street, Philadelphia, Pa.

Buhl Foundation, established in 1928 by Henry Buhl, Jr., reported that its capital assets were \$12,812,739 in 1941 and that expenditures for the year totaled \$266,895. The Foundation's programs center in the Pittsburgh area, where it has sought to provide more adequate factual bases for social work and regional economic effort, to promote research in public health and the natural sciences, and to develop the community's resources in higher education. Another objective is the advancement of housing standards for American cities, as exemplified in large-scale planned communities administered on a long-term investment basis. In demonstration of this last-named objective, the Foundation operates Chatham Village in Pittsburgh, built in 1932 at a cost of \$1,700,000. The Buhl Planetarium and Institute of Popular Science was built at a cost of \$1,100,000 in 1939 as a gift to the people of Western Pennsylvania. Director: Charles F. Lewis. Offices: the Farmers Bank Building, Pittsburgh, Pa.

Carnegie Endowments. See separate article.

Children's Fund of Michigan reported expenditures of \$703,167.77 during the fiscal year ending Apr. 30, 1941; capital assets on that date were \$8,514,344.83. The Fund was established by James Couzens with a gift of \$10,000,000 in 1929 to promote the health, welfare, happiness, and development of children in Michigan, primarily, and elsewhere in the world. Chief officer: Wm. J. Norton, 660 Frederick Street, Detroit, Mich.

Commonwealth Fund. See separate article.

Cranbrook Foundation is also devoted to the welfare of the people of Michigan, specifically in the field of education. Established in 1927, it maintains at Bloomfield Hills, Mich., a cultural center including three schools, an Academy of Arts, and an Institute of Science. Expenditures for the year ended June 30, 1941, were \$659,122; capital assets on that date, \$3,590,762. Chairman of the Board of Trustees: George G. Booth.

Duke Endowment, created by James B. Duke in 1924, is principally known for its connection with Duke University, but it conducts a number of other activities in the Carolinas as well. The Endowment is a permanent one with a self-perpetuating board of 15 trustees. Except for the \$17,000,000 spent in erecting and equipping Duke University, it is authorized to expend none of its principal. A report covering its first 16 years, ended Dec. 31, 1940, showed that the Endowment had distributed and allocated \$40,148,420 as follows: Duke University, \$19,642,159; hospitals, \$14,099,922; Davidson College, \$1,064,480; Furman University, \$1,065,303; Johnson C. Smith University, \$776,477; orphanages, \$1,795,314; superannuated Methodist preachers, \$373,692; rural Methodist churches, \$625,135 for building and \$705,938 for operations. Chairman of the Trustees: George G. Allen. Headquarters: Power Building, Charlotte, N.C.

Falk Foundation, The Maurice and Laura, makes grants to economic research organization for definitive studies of specific economic problems basic to

the development of American industry, trade, and finance. Grants voted in 1941 totaled \$113,000 and included appropriations to The Brookings Institution, Washington, D.C., for its general support (\$60,000), to the Carnegie Institute of Technology in Pittsburgh for the annual expenses of The Maurice Falk Professorship of Social Relations (\$10,000), to the Community Fund of Allegheny County, Pennsylvania, (\$12,000), to The Brookings Institution for a series of short studies of economic problems arising out of the current defense program (\$11,000). In addition, \$20,000 was appropriated for expenditures by the Foundation itself in connection with the dissemination to the public of various reports and summaries of studies made under its grants. Payments in 1941 on grants made in 1941 and earlier years totaled \$172,435.99. Capital assets had a market value of \$3,509,454.25 on December 15. The Foundation was established by Maurice Falk in 1929 with the provision that principal as well as income be used within 35 years. Executive Director: J. Steele Gow. Chairman of the Board of Managers: Leon Falk, Jr. Offices: Farmers Bank Building, Pittsburgh, Pa.

Field Foundation, Marshall. See OPINION RESEARCH CENTER.

General Education Board. See separate article.

Guggenheim Memorial Foundation, The John Simon was created in 1925 by John Simon Guggenheim and his wife as a memorial to their son who died at the age of 18. The original endowment was \$3,000,000, enlarged to \$7,000,000 by 1939, and further increased upon the death of John Simon Guggenheim in 1941 (see NECROLOGY) when the foundation was named residuary legatee and remainderman for trusts totaling \$2,500,000. In fulfilling its purpose to "promote the advancement and diffusion of knowledge and understanding and the appreciation of beauty" the Foundation awards fellowships, normally \$2,500 a year, to citizens of the United States and also to Latin Americans.

Hayden Foundation, Charles, founded in 1937 with an endowment of \$50,000,000, assists needy boys and young men, especially through aid to recreational centers. Offices: 25 Broad Street, New York City.

James Foundation of New York, Inc., was incorporated Aug. 23, 1941, under the Membership Corporation Law of the State of New York, pursuant to the provisions of the will of the late Arthur Curtiss James who died on June 4, 1941. The Foundation will receive, upon the conclusion of the executorial administration of the estate of Arthur Curtiss James, the residuary estate, the amount of which is not yet determined. The income of the funds received, and ultimately the principal of the funds, will be distributed through organized religious, educational, and other charitable corporations. The officers are William W. Carman, President, and Talbot T. Lewis, Secretary and Treasurer. Trustees: William W. Carman, Robert E. Coulson, William M. Kingsley, Talbot T. Lewis, and Charles E. Andrews. Offices: 40 Wall Street, New York City.

Juilliard Musical Foundation was incorporated in New York State in 1920, in accordance with the will of Augustus D. Juilliard, to aid worthy students of music, promote the instruction of the general public in the musical arts, and to encourage a deeper interest in music in the United States. Invested trust funds had a book value of about \$12,000,000 in 1940; only the income is distributed. Secretary: M. Steilen, 31 Nassau Street, New York City.

Kellogg Foundation, established by W. K. Kellogg in 1930 to advance the well-being of children with-

out regard to race, creed, or geographical boundary, expended \$2,303,461.13 during the year ending Aug. 31, 1941. Total capital assets on that date were \$46,574,167.69. The Foundation has undertaken and is administering the Michigan Community Health Project, a health program involving seven counties in southwestern Michigan. The present program includes also national and international health promotion activities and the granting of fellowships. President: George B. Darling. General Director: Emory W. Morris. Headquarters: Battle Creek, Mich.

Macy Foundation, established in 1930 by Mrs. Kate Macy Ladd in honor of her father, Josiah Macy, Jr., reported total expenditures for the year ending Dec. 31, 1941, at \$218,821.09; total grants paid \$162,233. Drafts are not permitted upon the endowment, which has a ledger value of \$6,280,869. Emphasis is placed on special problems in medicine which require for their solution studies and efforts in correlated fields as well, such as biology and the social sciences. In the present emergency the Foundation is giving special attention to health problems within its program which make a contribution to national defense. President: Dr. Willard C. Rappleye. Headquarters: 565 Park Avenue, New York City.

Markle Foundation, John and Mary R., established in 1927 by John Markle, has limited its new activities since 1935 to grants to institutions in aid of specific research projects in medical sciences. Appropriations made in 1940 amounted to \$552,385 while grants paid and operating expenditures were \$847,065. There were in progress during the year 153 separate projects receiving aid. The year-end market value of the principal account was \$16,246,677. President: J. P. Morgan; Vice President and Treasurer, Archie S. Woods; Secretary, Florence E. Quick. Offices: 14 Wall Street, New York City.

Milbank Memorial Fund, established in 1905, reported assets of \$9,712,050 at the end of 1940. Appropriations for grants and projects in that year totaled \$197,085. The Fund assists agencies and institutions in the field of public health and medicine, education, social welfare, and research. Emphasis is given to activities which are preventive rather than palliative, and to the improvement of administrative procedures in public health. In 1940, 30 organizations received funds, including Community Service Society of New York, \$20,000, Judson Health Center, \$25,000, Neighborhood Health Development, Inc., \$17,500, and Princeton University (for study of population problems) \$13,250. President: Albert G. Milbank. Executive Director: Fran G. Boudreau, M.D. Offices: 40 Wall Street, New York City.

Permanent Charity Fund was established in 1915 by the Boston Safe Deposit and Trust Company to furnish a medium through which money may be left in trust to charity. The principal of the Fund is invested and the income distributed to existing organizations, usually of Boston and vicinity. Payments to charities during the fiscal year ended June 30, 1941, totaled \$167,746 and capital assets on that date were \$5,572,978. President: Charles E. Mason. Secretary: Charles M. Rogerson. Offices: 100 Franklin Street, Boston, Mass.

Reynolds Foundation, Inc., established in 1936 for charitable and civic purposes within the State of North Carolina by the brother and sisters of Zachary Smith Reynolds, deceased, has since its inception used its income for a campaign to control venereal disease in the State. Annual grants have been made as follows to the State Health Depart-

ment for this purpose: (1937) \$100,000; (1939) \$160,000; (1940) \$200,000; (1941) \$175,000. The principal of the Trust had a market value of \$5,805,673 on Nov. 1, 1940. Trustees: Richard J. Reynolds, President, W. N. Reynolds, Mary Reynolds Babcock, Nancy Reynolds Bagley, W. R. Hubner. Secretary: Stratton Coyner, Winston-Salem, N.C.

Rockefeller Foundation. See separate article.

Rosenwald Fund, incorporated by Julius Rosenwald in 1917 "for the well-being of mankind," conducts its activities chiefly among Negroes and in the rural South. Capital assets on June 30, 1941, were valued at approximately \$4,000,000. The present program includes the following: (1) Rural education, especially in the south, for which about \$200,000 is spent each year. (2) Fellowships for advanced study for Negroes and white Southerners, for which \$100,000 a year is set aside; 96 individuals received new grants and 68 received renewed grants during the past two years. (3) Aid to important Negro universities, which is concentrated in four major centers—Howard, Atlanta, Fisk, and Dillard Universities; support was extended also to Talladega College for the first time in 1940. (4) The improvement of Negro health and race relations. President: Edwin R. Embree. Offices: 4901 Ellis Avenue, Chicago, Ill.

Russell Sage Foundation, created by Mrs. Russell Sage in 1907 as a memorial to her husband. Its purpose is "the improvement of social and living conditions in the United States of America." Its general aim is the study of the causes of adverse social conditions and the dissemination of information which will be of assistance to citizens and organizations seeking to ameliorate, remedy, or prevent such conditions. Among the types of activity carried on are adult education, city and regional research and planning, improvement of housing, family welfare, training for social work, community social work programs, child welfare, placement and vocational service, leisure-time activities, legal aid, service to travelers and transients, publications, organization of social workers, improvement of race relations, research, and social phases of the arts. Printed reports of its studies are made available at moderate prices. Among its recent publications are *Consumer Credit and Economic Stability* by Rolf Nugent; *The American Miners' Association* by Edward A. Wieck; and *Social Work Year Book 1941*. The original gift by Mrs. Sage was \$10,000,000, to which was added \$5,000,000 in her will. The offices of the Foundation are at 130 East 22 Street, New York City. Shelby M. Harrison is General Director.

Schalkenbach Foundation. See SOCIETIES under *Henry George School*.

Sloan Foundation, The Alfred P., incorporated in 1936, aids accredited schools and colleges in developing new "patterns" in economic education. On Nov. 30, 1941, its capital assets were valued at \$5,536,216. Up to the same date, the Foundation had made grants amounting to \$1,444,335. At present the Foundation is enabling colleges and universities to promote economic literacy through varied media, including radio, motion pictures, the printed word, fellowships, and class instruction. Among such projects aided by the Foundation are: the University of Chicago Round Table of the Air, a weekly radio discussion of economic phases of national and international questions; the New York University Film Library, which distributes sound motion pictures on economic subjects; and the Public Affairs pamphlets, containing popular digests of current economic researches, issued continuously by the Public Affairs Committee of New York.

Other beneficiaries include the Tax Institute of the Wharton School of Finance and Commerce at the University of Pennsylvania and the National Institute for Consumer Education. Moreover, both at the Massachusetts Institute of Technology and at the University of Denver, the Foundation maintains a special group of ten fellowships offered to college graduates in national competition. At M.I.T. these are awarded to young industrial executives for a year's study of social and economic conditions. At Denver the fellowships provide training for a new profession—appraiser of local government—through an 18-month course in taxation and public expenditure. In the field of applied economics, the Foundation enables the State universities of Kentucky, Florida, and Vermont to carry on experiments designed to aid low-income groups. The experiments aim to discover whether solely through instructing school children in simple, inexpensive ways of improving diet, housing, and clothing, the community level of living can be raised. Director: Harold S. Sloan. Offices: 30 Rockefeller Plaza, New York City.

Spelman Fund of New York was incorporated in 1928 with a principal fund of \$10,000,000. The Trustees of the Fund have power to use the principal as well as income to carry on its purposes. During 1941, the Fund continued its program directed at the improvement of methods and techniques in the field of public administration. Support was extended to public and quasi-public agencies engaged in disseminating information regarding advances in administrative practice, in developing new types of organization and operating methods, and in actually installing administrative improvements in governmental agencies. The Fund appropriated \$787,500 during the year. The Chairman of the Board of Trustees is Charles E. Merriam. The offices of the Fund are located at 49 West 49 Street, New York City.

Warm Springs Foundation, a membership corporation, conducts a modern and scientifically equipped institution at Warm Springs, Ga., with a capacity of 100 beds, for the study and treatment of the after-effects of poliomyelitis (infantile paralysis). The Foundation is the only institution devoting its energies entirely to infantile paralysis. It seeks to improve and perfect methods of treatment and make the knowledge gained thereby available to the medical profession and the public. With the completion of the hospital building at Warm Springs in August of 1939, the Medical Department for the first time in the history of the institution was provided with a unit in which every phase of treatment of the poliomyelitis patient could be applied and studied under one roof. President: Franklin D. Roosevelt. Chairman of the Executive Committee: Basil O'Connor. Address: 120 Broadway, New York City. See ART under *Museums*, gifts tabulated under UNIVERSITIES AND COLLEGES; LIBRARY PROGRESS. Also, see the different articles on churches.

PHILIPPINES. A group of islands lying in the northern tropics, between the Pacific Ocean and the China Sea; ceded to the United States by Spain on Apr. 11, 1899. The Tydings-McDuffie Act of Mar. 24, 1934, made the Philippines an autonomous commonwealth, designed to become fully independent in 1946. Capital, Manila.

Area and Population. The combined area is 114,400 square miles. This comprises 7,083 islands, of which only 466 cover as much as one square mile apiece. Two islands, Luzon (40,814 sq. miles) and Mindanao (36,906 sq. miles) account for more

than two-thirds of the whole area. Others, with their respective areas in square miles, are Samar, 5,124; Negros, 4,903; Palawan, 4,500; Panay, 4,448; Mindoro, 3,794; Leyte, 2,799; Cebu, 1,695; Bohol, 1,534; Masbate, 1,255.

The population was estimated at 16,771,900 on Jan. 1, 1941; at the census of 1918, 10,304,310. The city of Manila had (1939) 623,362 inhabitants. Persons from the United States, other than members of its armed forces and their families, numbered 4,144 in 1939. There were 117,461 Chinese; the Japanese numbered 29,262, of whom 17,888 were in and about Davao, on Mindanao Island. The Commonwealth in 1937 made Tagalog (the most prevalent native tongue) the official language. About one in eight of the population is estimated to have some knowledge of the English language; about one in 16, of Spanish. The Roman Catholic Church holds the greater number of the people of religious affiliation. An independent Filipino Church (Christian) has many worshippers. Mohammedans number not far from half a million. Protestants are estimated at 250,000.

Education. Public schools numbered 10,924 in 1938; 9,489 were primary, 1,316 intermediate, 114 secondary, and 5 junior colleges. These schools had 1,738,868 enrolled pupils. An Office of Adult Education, created in 1936, had 2,057 special schools by the end of 1938, instructing 125,783 adults. Higher education is imparted in several technical institutions and two important universities: The University of the Philippines, state-supported, with 7,711 students (1938); and the University of Santo Tomas, conducted by the Dominican Order. The 1939 census put the literacy rate for the entire Commonwealth at 48.8 per cent (20.2 in 1903).

Production. The islands produce for export a considerable variety of tropical products of the soil, such as sugar, abaca (Manila hemp), tobacco, and the coconut; and several minerals, especially gold, iron, chromium, and manganese. Gold production in 1940 was 33,589 kilograms valued at \$37,900,000, representing more than a five-fold increase during the preceding decade. In 1941, it was 1,161,210 oz. valued at \$40,642,350. Iron ore output rose from 593,894 tons in 1937 to 1,236,206 in 1940; the entire 1940 production went to Japan, but in 1941 United States export control laws restricted this market. Copper production (1940) was 20,413,236 lb.; exports of chrome ore, 194,393 metric tons (126,749 in 1939); exports of manganese ore, 58,038 metric tons (35,998 in 1939).

The estimated value of crops in 1939-40 was 381,067,000 pesos (rice, 159,741,000; sugar, 97,524,000; coconuts, 52,439,000; abaca, 15,053,000; corn, 18,986,000). The quota allotted the Philippines for sugar exports to the United States was 1,055,895 short tons for 1941 (982,441 in 1940). Production of sugar in the season of 1940-41 was estimated at 1,028,354 short tons. Tobacco production in 1939-40 was estimated at 747,956 quintals (of 22 lb.).

Livestock on Jan. 1, 1939, included 2,607,836 water buffaloes, 1,721,600 cattle, 504,967 horses and mules, and 3,558,274 swine. Embroidery, hats, mats, pottery, etc., are manufactured in home industries. Leading factory products are refined sugar, lumber, soap, refined coconut oil, shoes, textiles, and tobacco products.

External Trade. Total imports of 1940 were valued at 269,462,542 pesos (peso equals 50 cents, U.S. money), as against 245,535,000 for 1939; exports, at 236,048,886 pesos, as against 242,450,000. The totals for exports omitted gold and silver; there

were exported, however, 77,750,000 pesos of these metals (almost all gold) in 1940 and 78,670,000 in 1939; thus all exports, the two metals included, amount to 311,849,047 pesos for 1940 and 316,125,000 for 1939.

The Philippines regularly did the bulk of their external trade with the United States. Philippine imports of U.S. merchandise totaled \$93,335,474 for 1940. Philippine exports to the United States were \$129,326,754 for 1940, including gold and silver.

Finance. The outline of the budgets subsequent to 1937 included not only an approximate balance of ordinary expenditures and receipts but also heavy capital expenditures, met principally out of a lump sum of over 111,000,000 pesos received in 1937 from the U.S. Government as an offset for the latter's collection of a tax on imported vegetable oils. The budget for the 1942 fiscal year called for expenditures totaling 112,675,480 pesos; it put ordinary income at 82,310,000 pesos and proposed to put receipts up to 112,982,000 by taking 20,672,000 from surplus and issuing bonds for 10,000,000 pesos.

Transportation. The island of Luzon in 1941 had about 700 miles of railway, the greater part of all the rails in the Philippines. The Manila Railroad Company operated the lines in Luzon; the Government of the Commonwealth owned this company's common stock. The Philippine Railway Company operated lines on the islands of Panay and Cebu, aggregating 133 miles. Producers of sugar and of lumber had an aggregate of thousands of miles of private rails. Several airlines operated to all parts of the Commonwealth. Pan American Airways maintained regular service with the United States, Singapore, and Hong Kong. Under normal conditions the Philippines are well served by steamship lines of all nationalities.

Government. The system of government in operation in 1941 rested on the Philippine Independence Act, passed by the U.S. Congress in 1934. Under this act a constitution, written by a Philippine constitutional convention and approved by popular vote, went into effect Nov. 15, 1935. A President, elected by popular vote for a term of six years, exerts great executive authority. The power of legislation resides in a National Assembly of a single chamber of 96 members elected for three years. Under constitutional amendments adopted in 1940, the term of a President, after the end of the current six-year term, was cut to four years; his reelection, previously forbidden, was allowed, and in the special case of the immediate incumbent only, he could be reelected for a term of two years to follow the six-year term. The National Assembly, after the close of the members' current terms, was to consist of two houses, through the addition of a Senate with its members elected at large. An electoral commission also was created.

The U.S. Government, pending the completion of independence in 1946, retains a measure of authority. The Commonwealth is limited as to public debt and some features of taxation. The United States keeps charge of foreign relations. Constitutional changes and such acts as affect currency, coinage, imports, exports, and immigration require the approval of the President of the United States. Appeal may be taken from Philippine courts to the U.S. Supreme Court. The U.S. Government maintains as its representative in the Commonwealth a High Commissioner.

President of the Commonwealth, Manuel Luis Quezon. U.S. High Commissioner, Francis Bowes Sayre.

HISTORY

Japanese forces overran much of the Philippine Commonwealth in December, 1941, threatening at once to end the Islands' connection with the United States and the Philippine prospect of independence. Japan began war on the United States on December 7; on that day Japanese airplanes dropped bombs on the island of Mindanao and in central Luzon—the first of a series of bombings that brought swift ruin to civil as well as to military property, set great fires in Manila, and destroyed much of the Islands' force of airplanes and a number of vessels. Japanese troops began landing at several points on the coast of Luzon on the 10th. Out of these landings, through successive reinforcements, grew separate invading armies, north and south of Manila, which quickly pushed back the defenders. On Jan. 2, 1942, the American and Filipino forces, abandoning Manila and the naval base of Cavite, took up new defensive positions—the mobile land forces on the rugged Bataan peninsula along the western edge of Manila Bay and the naval vessels in the Dutch East Indian waters. In 26 days the Commonwealth had lost its capital, all but a small remnant of its chief island, and a part at least of its next most important area, the island of Mindanao. See *WORLD WAR*.

Awakening to the Peril. The history of 1941 prior to December 7 has largely to do with the approach of the Japanese peril, the ways that the governments of the Commonwealth and of the United States took in order to meet the danger, and the failure of the two to reach a sufficiently early agreement on the course to take.

Almost from the outset of the year the authorities busied themselves with preparations to defend the islands against the previously familiar and now ever nearer prospect of Japanese invasion. High Commissioner Sayre declared, February 28, that plans had been made, by a special civilian board, to remove much or all of Manila's population of 600,000 in case of bombardment. As to military manpower, Maj. Gen. George Grunert, commanding the Philippine Department, U.S.A., arranged, as early as February 2, to incorporate with his forces 5,000 Filipino reservists, for a year of additional training. Meanwhile troopships from time to time brought to the Islands reinforcements from the United States. In February the U.S. cruiser *Cincinnati*, and in March the *Trenton*, brought to Manila loads of parts and munitions for airplanes. On April 22 the transport *Republic* brought in a contingent of reportedly 2,000 men, called the greatest to arrive at one time since the end of the Filipino insurrection. But no major reinforcement from the United States was attempted.

The Commonwealth Government, which had lowered the yearly number of recruits for military training to 20,000, raised it to 40,000 in the middle of April. President Quezon himself started at the end of January an effort to obtain money, set aside for the Philippines in special U.S. funds, for the Commonwealth's defensive expenditures. These and other measures taken early in the year made it plain that the U.S. Army, the U.S. High Commissioner, President Quezon, and their assistants agreed in their concern over the prospects of Japanese invasion and in trying to provide against it.

Intrusive Economic Difficulties. The Philippine Islands were not in good economic condition early in 1941. They had gathered less than a normal crop of rice at the last harvest, not enough to warrant the usual exportation. The dearth of shipping had pinched the outlet for crops and other products to build up purchasing power. Thus embar-

assed, the government had to look elsewhere for money in great quantities, with which to pay for stronger military protection. It had, in Quezon's judgment, even to buy a substantial quantity of additional foodstuffs, with which to eke out its own somewhat scanty year's production and lay up a stock against risk of famine. Quezon risked additional economic trouble by offering to stop the export of strategic materials to any destination but the United States. There went on at this time, late March, a busy exportation of Philippine copra to Russia, whence the suspicious thought that some went on to Germany, then Russia's friend.

Hampered by lack of outgoing trade, the Philippines could not do much to finance their own defense. Quezon put the case plainly to the Philippine Assembly, January 31. The United States alone could make peace or war; defense was the Commonwealth's greatest concern; Filipinos put their manpower and resources at the United States' disposal for that purpose; the Islands must in turn draw on the United States for financial aid. The slowness of Congress in appropriating funds tended to retard defense preparations.

Another difficulty, alleged by Quezon in a speech of November 28 to students at the University of the Philippines, related to the situation earlier in the year. Quezon said he wanted to make strong use of extraordinary powers proper to an emergency, so as to hasten measures for the protection of the population from enemies' operations, as by shelters and measures to conserve fuel and gasoline; but critical liberals assailed him as arbitrary, and President Roosevelt asked him, by wireless, not to use extraordinary powers, lest democracy be unfavorably affected. "Imperialists," he further asserted, tried to block his plans of defense so that they could point later to the Philippines' lack of preparation, when war should come on. Having done as President Roosevelt, according to him, requested, Quezon was later urged by the High Commissioner to give extraordinary powers to a Civilian Emergency Commission and did give them.

The Defensive Policy. According to Quezon's speech of November 15, President Roosevelt, General MacArthur (creator of the Commonwealth's army), and Quezon agreed from the outset that it was feasible to make a serious defense of the Islands. At first almost alone in holding this view, save for the support of the Filipino people, they developed their idea into the established policy. Since it was not practicable to send hundreds of thousands of men to the Philippines from the United States, this policy involved using the troops of the Philippine Army largely and indeed mainly for meeting the invasion of Philippine soil.

The policy went into force at the end of July. President Roosevelt on the 26th ordered all the land forces in the Islands put under the command of a single general; MacArthur, the obvious man for the place, was made Lieutenant General, U.S.A., in active service. On the 30th MacArthur, as commander of all land forces in the Islands, announced the plan to bring 140,000 reserves of the Philippine army into service as fast as feasible, by their incorporation in successive divisions. They were to keep the Philippine uniform and scale of pay, but the U.S. Government was to maintain them, by appropriation either from general fund or from Philippine trust money. These moves followed directly on the order of President Roosevelt stopping the transfer of Japanese assets in American territory (see *JAPAN under History*). Not all the 140,000 had apparently been brought into

service by the time of the Japanese landing. An order of full mobilization was indeed issued on December 16, in the midst of the confusion started by the Japanese advance, but its degree of efficacy at so late a date was not subsequently determined.

The suddenness of the Japanese attack and the crippling of the U.S. Naval force in Hawaii on December 7 compelled Philippine defense to go into action only partly organized. The plan to defend the Philippines did not mature early enough to have full effect. Its partial effectiveness under the actual circumstances did credit to the judgment of MacArthur, who had insisted that a properly organized native army could defend the Philippines with sufficient vigor to make the cost to an invader greater than the conquest.

Other Events. Manuel Quezon, candidate of the Nationalist Party, was elected President of the Philippine Commonwealth for a second term, by great majority of the popular vote, on November 11. His first term had been one of six years. Before the election of 1941 he declared his intention of retiring after two years of a second term, in order to limit his tenure to the eight years allowed, in two terms, under the amended constitution. Quezon was inaugurated for his second term on December 30, in a dugout near MacArthur's headquarters, after the abandonment of Manila. The Assembly held session in the spring and again in the days immediately after the outbreak of the war with Japan. It voted in May measures to apply restrictions to Philippine exportation of hemp, iron ore, and copper, all sought by Japan, and to register all the 250,000 aliens in the country.

President Roosevelt issued, December 28, a message to the people of the Philippines, praising "your gallant struggle" against the Japanese and giving "my solemn pledge that their freedom will be redeemed." See BRITISH MALAYA under *History*; ENEMY ALIENS.

PHILOLOGY, CLASSICAL. Europe's greater preoccupation has hastened the progress of maturity and independence in American classical scholarship. Study and investigation take directions not necessarily dictated by trends abroad, and in more and more specialties the outstanding figures are American. This is true of epigraphy, papyrology, ancient philosophy, less so in palaeography, very patently so in ancient history. Rostovtzeff's *Homeric Social and Economic History of the Hellenistic World* just published in three volumes (following his earlier monumental *Social and Economic History of the Roman Empire*) and the completion of the late Tenney Frank's *Economic Survey of Ancient Rome* in five volumes prove that in detailed investigation, in synthesis, and in philosophic interpretation America holds the primacy in ancient history.

Fifty-four classical dissertations are listed for the year in E. A. Henry's *Doctoral Dissertations Accepted by American Universities*; this is about ten per cent above the ten-year average. The average for dissertations in English departments, for example, is only about three times as great, whereas there are surely five times as many professors of English as of Classics in the country. The conclusion might be drawn that there is a relatively greater scholarly interest in the classics. The aim of classical scholarship in this country is the disinterested interpretation and criticism of phases of ancient literature, language, history, and institutions. This is to be contrasted with the tendency in Germany and Italy where ancient life and letters, when they are studied at all, are pressed to yield precept and example for contemporary prob-

lems in politics and economics. This is not to say that classics in this country have been relegated to the ivory tower. Last year, this year, and next year a single American publishing house will have brought out, in current standard translations but with new introductions and other subsidia, the complete extant works of Aeschylus, Sophocles, Euripides, Herodotus, Thucydides, Aristophanes, Plato, Xenophon (not entire), Aristotle (almost complete), Epicurus, Menander, Plautus, Terence, Lucretius, Tacitus, Seneca (tragedies), Marcus Aurelius, and Epictetus; Homer, Vergil, Horace, and Plutarch were already on their list. The sizes of these editions are many times those of similar works that have hitherto appeared in English. No better proof of the widespread interest in classical antiquity could be cited.

For professional scholarly work in the classics the best guide to the quantity, direction, and personnel is the current volume (71) of the *Transactions and Proceedings of the American Philological Association*. In addition to 42 substantial papers and abstracts of 46 others the volume gives information about the activity of American scholars, as for example a bibliographical record of all the members of the association. The membership (over 1,000) is slightly larger than five years ago, but the number of contributors and the range and volume of their work is markedly larger, so that the current volume is twice the size of those issued four or five years ago. The scientific quarterlies, *American Journal of Philology* (Baltimore) and *Classical Philology* (Chicago) and the review organ, *Classical Weekly* (Pittsburgh) are flourishing and in some cases expanding. The more popular monthly, *Classical Journal* (St. Louis), is less prosperous, which would indicate a smaller following among High School teachers, to whom it makes its chief appeal. Greek and Latin studies in the High Schools and among undergraduates are no more than holding their own, being restricted to a specialized group rather than remaining part of the general culture. In June, 1941, only 2,983 students took the Latin examinations of the College Entrance Examination Board, whereas five years earlier the number was 4,404 (figures from the Board's *Forty-first Annual Report of the Executive Secretary*). The enormously expanded interest in ancient literature has not brought with it increased interest in ancient languages, and those who teach it are not apt to be trained in philology. These various items fit together. Graduate study, since it is not likely to provide a paying career in teaching Greek and Latin, is apt to be in pure scholarship and apt to favor Greek over Latin. On the one hand highly specialized scholarly organs flourish, and on the other translations of the classics are distributed in large editions, there is a decline of interest in the middle ground occupied by persons intelligently interested in classical scholarship but not themselves specialists in the subject. Nevertheless, as may be seen from the "News Items" in various numbers of *Classical Journal*, there has been sustained activity in the various State and local associations. The meetings of the regional associations have been better attended and have listened to more scholarly papers than ever. See *Philological Association* under SOCIETIES.

Scholarly work and publication continue in England and Germany, though of course on a reduced scale; the trickle from the occupied countries has almost entirely ceased. The 1941 meeting of the Classical Association of England reported a membership of 2,395; Mr. T. S. Eliot was made president. That association has acknowledged with

thanks a gift of \$1,000 from the American Philosophical Association to help it continue its activities in difficult times. The American School at Athens is of course in a state of suspended animation. The School of Classical Studies of the American Academy in Rome is offering three fellowships under the usual conditions except that the holders are to carry on their work in some American graduate school instead of in Rome.

Next in importance to Rostovtzeff's book mentioned above is Martin P. Nilsson, *Geschichte der griechischen Religion* (in the *Iwan Müller Handbuch der Altertumswissenschaften*). In the same series the Attic period has now been covered in Schmid-Stahlin, *Geschichte der griechischen Literatur*. Other books to be mentioned are the third volume of F. Jacoby, *Fragmenta Historicorum Graecorum*; G. E. F. Chilver, *Cisalpine Gaul*; I. Linforth, *The Arts of Orpheus*; C. W. Mendell, *Our Seneca*; G. Thomson, *Aeschylus and Athens*. Some ten new volumes of Greek or Latin texts with English translations have appeared in the Loeb Classical Library; it is interesting to note that this series is now being printed as well as published in America. References to other publications may be found in the bibliographical appendices of the periodicals listed in the 1938 volume of this YEAR BOOK, 585 f. Accurate revision of this list is impossible at this time. Reasonably complete information is to be found in vol. 270 of *Jahresbericht über die Fortschritte der klassischen Altertumswissenschaft* and in vol. 13 of J. Marouzeau's *L'Année Philologique*.

MOSES HADAS.

PHILOSOPHY. The American Philosophical Association represents more movements, schools, and opinions in the field of philosophy than any other body and its annual meetings often furnish a good picture of developments and prevailing interests. But there are other philosophical associations of considerable importance. The American Catholic Philosophical Association, although it has had joint sessions with the A.P.A., meets separately, being devoted almost exclusively to scholastic and neo-scholastic thought.

The symbolic logicians also meet separately, although they hold some joint meetings, occasionally with the A.P.A. but more often with the American Mathematical Society. The organ of the Association for Symbolic Logic is *The Journal of Symbolic Logic*, which has just finished its sixth year. The tendency of the *Journal* has been increasingly technical and mathematical, the philosophy of logic and mathematics being sacrificed to the interest in symbolic calculi, so that some articles on a par (say) with B. Russell's *Introduction to Mathematical Philosophy* appear to have no place. On the other hand, the review section is much broader and more liberal, presenting excellent summaries and criticisms of a wide range of logical publications.

The logical positivists (or empiricists) also have separate meetings. Their International Congress for the Unity of Science is dedicated to a program of unifying the sciences, mainly by the creation of a unified language in which the statements of any science are expressible. Under the leadership of Rudolf Carnap, Otto Neurath, Hans Reichenbach and others, the logical empiricist movement has grown in strength through the concentration in this country of distinguished refugees from Europe and has gained many adherents, but also reaped much searching criticism, from other schools. Its success is due in part to the appearance it offers of greater definiteness and rigor. Extensive use of logical and

mathematical techniques and hostility to metaphysics both prove attractive as interest in speculative and systematic philosophy declines. The movement has effected rapprochement not only with symbolic logicians and with mathematicians and physicists working in foundations, but has discovered in operationalism a common basis with Bridgman and Deweyan pragmatism or experimentalism. Although devoted to their own program, the logical empiricists often welcome outsiders and opponents. At their last meeting (September, 1941) at Chicago, C. Morris, L. Rougier, and O. Neurath discussed "Task of the Unification of Science," R. Carnap and Philipp Frank appeared in a symposium on "Logic and Mathematics," and other well known logical empiricists such as C. G. Hempel, H. Feigl, E. Zilsel, and H. Reichenbach were on the program. But the psychologist, Kurt Lewin, the historian, Oskar Lange, the mathematician, H. B. Curry, not identified with the movement, also read papers, and even A. Korzybski, whose ideas are altogether out of line. L. Feuer also introduced novelty by maintaining that ethical language may be interpreted as the idiom of the "super ego," and that this language will become obsolete whenever society overcomes the necessity of social coercion. The organ of the logical empiricists is *The International Encyclopedia of Unified Science*. One of its advisors is Bertrand Russell, who in his recent book, *An Inquiry Into Meaning and Truth*, took issue sharply with many aspects of the movement. The last issue of the *Encyclopedia*, *The Development of Rationalism and Empiricism* contains an essay by George de Santillana which describes the evolution of basic ideas in the science of the 19th century and the fate of scientific rationalism; also an historical article, *Problems of Empiricism* by Edgar Zilsel. Although the movement is chiefly occupied with syntax and semantics, and with problems of probability and foundations of science conceived in these terms, historical interest is voiced.

Another philosophical association which, like the Symbolic Logic and Unity of Science groups, has been built up and sustained by the help of distinguished refugees from Europe, is the International Phenomenological Society. Its organ is the quarterly, *Philosophy and Phenomenological Research*, established in September, 1940. Its editors are former students of the late Edmund Husserl, and most of them are refugees. The journal has performed the valuable service of publishing (in German) various posthumous writings of Husserl, showing the late trend of his philosophical development. In the September issue 1941, for example, there is printed for the first time a lecture given by Husserl in Berlin, 1931, entitled, *Phänomenologie und Anthropologie*, in which he takes issue with the anthropologism gaining currency at the time, even among some of his own students. But the journal not only elucidates and promotes phenomenology, but also adapts itself to the American scene. A number of American philosophers untouched by Husserl's influence, have nevertheless discovered agreement with his method or results. The issue alluded to above contains C. J. Ducasse's "Objectivity, Objective Reference, and Perception," a lengthy phenomenological analysis, not in the least indebted to Husserl. E. Parl Welch's *The Philosophy of Edmund Husserl* (1941) provides an introduction to phenomenology and an excellent bibliography.

A review of the literature of the year, and a glance at the papers read at the A.P.A. meeting held this year at Vassar will show that a great many contributions do not fit into the schools and movements discussed above.

The anniversary of the birth of Wm. James furnished the occasion for a symposium in his honor at the annual meeting of the American Philosophical Association. G. S. Brett, leading historian of psychology, maintained that in James' psychological writings, such as the *Principles of Psychology*, and particularly in his alternate emphasis on cognition and volition, the basis of his later philosophy is to be found. In an illuminating paper, H. W. Schneider saw James as his father's son, a champion of "individual manliness." James' ethical ideal developed under the influence of Goethe, Darwin and such philosophers as Renouvier, Green, Royce, Sigwart, Spir, and Peirce. The outcome was a radical individualism, "idealistic, pluralistic—Kantian, anti-Hegelian, anti-utilitarian." "His chief interest remained to defend the claims of individuals against God, against Society, and against science (romantic gnosticism) in spite of the 'strenuous' character and 'tragic' consequences of this Promethean and heroic ideal."

In another symposium on "The Relation of Sign to Object Signified," E. Nagel suggested that scientific expressions which have no apparent referents in the external world, really "serve to integrate various parts of an inclusive inquiry; the specific 'objects' which they signify are thus certain modes of conducting inquiry." The suggestion is in line with Dewey's view presented in *Logic, The Theory of Inquiry*.

The philosophy of the 19th century Danish thinker, Kierkegaard, which is very influential in Nazi Germany and has latterly won admirers in other European countries, in South America and in the United States, was discussed in two papers. K. Löwith pictured Kierkegaard as the historical counterpart and opponent of Marx and claimed that his *Das EINE was not tut* (1848) contains Kierkegaard's answer to *The Communist Manifesto*, (1847). The Danish philosopher insisted that the lonely individual make an either-or choice between real Christianity and everything else, including Christianity interpreted as social philosophy or meliorism. He tended, however, to identify religion with the individual's attitude toward God, and hence to forfeit a transcendent God. Erich Frank agreed that, unfortunately, Kierkegaard and the Existentialists (a present day German school) fall into subjectivism, but needlessly, for objectively theirs is the true diagnosis of man's present quandary. "In the limitation of his existence which is determined by the inevitability of guilt, death, physical and spiritual struggle, man encounters a truth which transcends his subjectivity."

There were a series of papers on scattered subjects. E. J. Nelson rejected the positivistic position that a principle of induction "is a maxim of procedure," and hence "neither true nor false," and maintained that realism, which any inductive principle presupposes, should be assumed until a suitable rationalism can be found to justify it. In the field of esthetics, Max Rieser concluded that the esthetic significance of order and harmony in art "is not due to their being a form, but to their being meaningful terms in esthetic language." It is not the shapes that count but the ideas represented by them. Other papers on esthetics, logic, history were presented and the meeting closed with a session devoted to "The Philosophical Presuppositions of Democracy" which did not appear to throw much new light on the subject.

Besides the Eastern Division of the A.P.A., whose meeting is described above, there is also a Western and a Pacific Division, each holding meetings within its area. Perhaps the most important paper read

at the last meeting of the Western Division of the A.P.A. was "Logical Systems and Principles of Logic," by Marvin Farber. The meaning of "alternative" systems of logic is discussed in relation to alternative geometries, the admissibility of the Law of Excluded Middle in logical and mathematical systems, in relation to the question whether all propositions are "decidable" (*Entscheidungsfrage*). The trouble with the realistic view is that it excludes objectively undecidable propositions by definition, and is embarrassed by the resulting paradoxes, for sciences with paradoxes, as Husserl has maintained, are not genuine sciences. Farber concludes that "decidable" should be defined for every system and that in general more analysis is needed of the logical activities of the logician if a logic is to be built in which paradoxes will not occur.

This brief survey of schools, movements, associations, and periodicals of philosophy should include a reference to recent publications of The Philosophical Library such as *The Philosophical Abstracts*, edited by D. D. Runes, now in its second year, which digests books and important articles by countries; U.S., Gr. Britain, Latin America, Italy, Germany, France, Japan, Rumania, U.S.S.R., India, etc; a new quarterly, *The Journal of Aesthetics* (founded spring, 1941); and finally *The Dictionary of Philosophy*, which contains definitions of terms peculiar to philosophy, to schools and movements. Medieval, Indian, mathematical, and modern Soviet philosophy are especially well covered.

If William James (1842-1910) has received the greatest acclaim this year, Alfred North Whitehead, at Harvard until his retirement a few years ago, has sustained the most analysis and criticism. The two philosophers are not unrelated. Victor Lowe (*Jour. of Philosophy*, Feb. 27, 1941) maintain that in spite of James' distaste for metaphysical construction, they agree in the matter of radical pluralism, the important experiential character of relations, transitions, contexts, and transmission of feelings, and on the immanence of the past in present memories. Whitehead's "non-sensuous perception," the author holds, "is what James later called 'the plain conjunctive experience,'" and he finds Whitehead's important doctrine of "prehension" prefigured in the famous chapters on the Stream of Thought.

The significance of the experiential character of relations is also central in the discussion. "Whitehead's Answer to Hume," (*Jour. of Phil.*, Feb. 13, 1941). J. W. Robson here maintained that Hume's epochal doctrine that experience affords no basis for any prediction of the future, remains unshaken by Whitehead's attempt to discover such a basis in the experience of transitions, i.e. of relations terminating in the determinate future, which are what they are only if the determinate future exists. Mason W. Gross, on the other hand, argued that Whitehead has satisfactorily answered the problem of induction, if only "internal relations with the immediate past and the environment" are accepted.

The most comprehensive commentary on Whitehead's philosophy appeared during the year in the third volume of *The Library of Living Philosophers: The Philosophy of Alfred North Whitehead*. Victor Lowe, in a long essay, traces the development of the philosopher's thought beginning with his early life and from his first book, *A Treatise on Universal Algebra* (1898) to his last, *Modes of Thought* (1938). Lowe is successful in showing that even in the *Universal Algebra*, Whitehead's main interest was synoptic or synthetic and hence really philosophical, and that there is no sharp change of heart or of interest, as is often supposed,

between his first mathematical period, roughly from 1898 to 1919, the second period in which the new developments in physics were uppermost, from 1919 to 1925, and finally the last metaphysical period, from 1925 to the present. Whitehead's specific philosophical interests were in evidence from the first, and even where he dealt with science, it was the philosophical aspects which occupied him. Quantum mechanics and Einstein's Relativity theories were after all, philosophically very provocative. Although Whitehead's own Relativity Theory, alternative to Einstein's, "failed to deflect the path of physics," it "may yet affect the history of Science for he deduced several consequences which differ from those of Einstein's theory by minute quantities still beyond our powers of observation." Of special interest is Lowe's demarcation of Whitehead's philosophy from the Humean tradition and from B. Russell's work. Even in 1915-17 Whitehead (1) set store by metaphysics, (2) was not inclined to skepticism, (3) began to reject the construction of a public world from privacy as a false start, (4) and to see that the past is immanent in the present, and (5) that immediate experience has a certain uniformity of texture. (5) is the basis of Whitehead's "prehension" and also of his insistence, as against Einstein, that geometry of actual space be construed as homogeneous. W. V. Quine's essay analyzes the contributions of Whitehead to modern logic, with particular attention to *Principia Mathematica*. Especially repaying are the sections concerning the second and third volumes which are seldom studied. The weakness of Whitehead's philosophy of science, according to F. S. C. Northrop, are: his assumption of "internal relations" between sense data and his overemphasis on their cognitive value, his failure to account for public time, scientific causality, etc. Its strength is that it accounts for certain facts, such as Kant's "incongruent counterparts" and Newton's rotating bucket experiment, better than Einstein's theory does. E. B. McGilvary is also concerned with Whitehead's physical theories, while J. Needham, of Cambridge, England, reviews the biological implications of his organismic philosophy. Needham suggests that Whitehead's emphasis upon process, his acceptance of the "unity of opposites," his polemic against sharp boundaries between the sciences, against mechanical conceptions such as "nature at an instant" and against the doctrine of "external relations," is in accord with dialectical materialism. Other essays in the volume are devoted to Whitehead's psychology and ethics, his theory of art, organism, religion, esthetics, and education. Instead of a reply to his critics, in accordance with the plan of the Library, two Whitehead essays, *Mathematics and the Good* and *Immortality* are printed at the end. Curiously enough, no critic referred to Hegel, although he must have been indirectly, a great influence on Whitehead.

The thesis of Herbert Marcuse's *Reason and Revolution, Hegel and the Rise of Social Theory* is that Hegel is in no sense a father of National Socialism, that his stress upon reason and the universality of law is inconsistent with Nazi irrationalism, capricious power politics, and cynical use of propaganda. Never really accepted by conservative forces in Germany, Hegel was adopted by Marx, Engels, and Lenin, and migrated to Moscow. The ideological roots of fascism are to be found in the positivistic reaction against Hegel, (F. J. Stahl, A. Comte and others) which "substituted the appeal to facts for the appeal to reason." Documentation which would support Marcuse's evident opinion that National Socialism is primarily an economic phenomenon, is furnished by A. R. L. Gurland's *Technologi-*

cal Trends and Economic Structure under National Socialism (*Studies in Philosophy and Social Science*, Inst. of Social Research, 1941) and by M. Y. Sweezy's *The Structure of Nazi Economy* (Harvard U. Press, 1941). Another book on Hegel, J. G. Gray's *Hegel's Hellenic Ideal*, demonstrates the enormous influence of Greek norms and Aristotelian philosophy on Hegel's thought, shows Hegel's early preference for Greek religion as against Christianity, and his later reconciliation with Western religion and ideals. The conflict between classicism and Christianity, however, remained a central tension in his mature thought.

Whitehead's warning against the sequestration of the sciences from one another and from philosophy, is heeded when scientists write philosophy, or vice versa. Most interesting from this point of view is Joseph Mayer's *Social Science Principles in the Light of Scientific Method*. Here a political scientist and historian applies philosophy and social theory to problems of method with special reference to modern economic thought. Philosophical theories of R. B. Perry, Santayana, and Laird, for example, are brought to bear upon the thought of such economists as Keynes, B. M. Anderson, and J. M. Clark. In concluding the author makes the important point that in social science (unlike natural science), normative standards are significant, for its legitimate aim is to bring about the good. Another book on scientific method, long overdue, is A. Lowinger's *The Methodology of Pierre Duhem*, a careful study of the distinguished French philosopher and historian of science. *Man on his Nature*, by Sir Charles Sherrington, contains the philosophical reflections of the great physiologist who sees the human mind insulated from other minds, and regrettably unexplained by the "integrative action of the nervous system."

In the field of historical philosophy Benedetto Croce's *History as the Story of Liberty*, written in Naples, strikes a blow for freedom, perhaps at some risk to the author, yet what he praises is, after all, an aristocratic freedom, chiefly for the intellectual élite. George H. Sabine's *The Works of Gerrard Winstanley With an Appendix of Documents relating to the Digger Movement* is a generous collection of Digger tracts, together with a long critical introduction by Sabine. It gives us, for the first time, a good picture of mystical tendencies and communistic ideals of left-wing groups of Cromwell's England.

Three outstanding books may be mentioned in conclusion. In *Philosophy as a Science*, C. J. Ducasse refutes a series of current definitions of philosophy and its subject-matter, and then defends his own contrasting position. His criticism of Russell's conception of philosophy as logic, of Dewey's social interpretation, and of Carnap's view that philosophy is the logical syntax of the language of science, is terse and meaty. Ducasse's own definition of philosophy is in terms of subject-matter or primitive facts, which he takes to be appraisals or valuations. This definition, however, would not exclude logical positivism altogether and the author agrees that logic may be largely a matter of syntax. Philipp Frank's *Between Physics and Philosophy*, deserves mention because Frank, a physicist, philosopher, and leading logical empiricist, was a member of the original Vienna Circle, and gives one of the few accounts of the historical development of the Circle. Frank shows that it was much influenced by socio-political events in Europe, and at times reacted by retiring to an ivory tower. A series of popular essays, dealing with modern physics and philosophy, Quantum theory, positiv-

ism, metaphysics, etc., it should serve as a good introduction to logical empiricism. The most dominant note is insistence on the contemporary importance of Machian ideas and tradition; the most challenging, is the contention that logical empiricism and Soviet philosophy have much in common. Ledger Wood, in his *Analysis of Knowledge*, shows a certain sympathy with logical empiricist semantics, but differs fundamentally as to the referential function of knowledge. The book is distinguished from other epistemological studies by its careful consideration of data supplied by psychology.

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V JERAULD MCGILL

PHLEBITIS. See MEDICINE AND SURGERY under *Prophylaxis of Pulmonary Embolism*.

PHONOGRAPHS. See RADIO

PHOSPHATE ROCK. The domestic demand for phosphate rock jumped 16 per cent in 1940 and it was put under export-license control, Mar. 4, 1941. Practically none was imported in 1941. Even in 1940 imports amounted to only 2,953 long tons from the island of Curaçao, Netherlands West Indies, where phosphate mining ceased entirely for the duration of the war. Hence domestic phosphate rock production was enormously increased in 1941, especially in Tennessee and Florida, and by the end of the year all producers were operating at almost 100 per cent capacity. Plans for pushing up 1942 production were being made, but no new sources were discovered or developed during 1941. Increases in the cost of labor and fuel raised the 1941 prices slightly above those of 1940 and may cause some additional increases in 1942.

PHOSPHORUS. See CHEMISTRY, INDUSTRIAL.

PHOTOENGRAVING, PHOTOMECHANICAL PROCESSES. See PHOTOGRAPHY.

PHOTOGRAPHY. Photography in national defense was the keynote of the year. As the tempo of the war increased with nation after nation being drawn into the maelstrom, more and more men and women in all countries were trained with the aid of photography, either for immediate military service or in vital defense industries. Photographic branches of the armies, the navies, and the air corps bustled with activity. Photographic industries hummed with production and struggled with priority restrictions as defense needs began to cut off the supply of certain metals, chemicals, plastics, etc., which were considered requisites in this field (*Photo-Technique*, Sept., 1941).

Color Photography. Although the military aspect of photography dominated the scene, significant advances in the field of color photography were announced during the latter part of the year. In August, the Kodak Company showed at Chicago the first enlargements from Kodachrome transparencies. These were made on a semi-opaque safety (cellulose acetate) base instead of paper and they were processed by the manufacturer. Two types of prints were supplied from the customer's negatives, namely (1) "Municolor," which represented a two or a five times enlargement from miniature films, and (2) "Kotavachrome," enlargements in sizes varying from 8 x 10 inches to a maximum of 30 x 40 inches from professional sheet Kodachrome transparencies. With this latter, a certain degree of color correction was used if necessary or requested.

An entirely new process of color photography, called "Kodacolor," was announced in December by Dr. C. E. K. Mees in a lecture before the Franklin Institute at Philadelphia (N.Y. Times, Dec. 18, 1941). After exposure in the camera in the usual way, the film was developed by the manufacturer to a color negative in which all silver was removed leaving a dye image having colors complementary to those of the original subject. Thus a blue sky appeared yellow in the negative, red lips were blue-green or cyan, and green grass came out magenta. When this color negative was printed upon a paper coated with a similar set of emulsions as used for the film, a color print was obtained in which the colors of the original subject were reproduced. Thus, for the first time in the history of photography, a negative-positive process of color photography was made available commercially for the amateur which gave a color negative and had as its end result, a print on paper in full natural colors. Details of the new process were thus described by Dr. Mees: "The film is coated with the three light-sensitive emulsion layers as well as a yellow filter layer. In each of the emulsion layers are suspended particles of organic compounds insoluble in water, so small that they can be seen only under a high-power microscope, and these particles contain the couplers required to produce the dye appropriate to each layer when they react with the oxidized developer."

The Crawford "Flexchrome" color process combined the use of a relief image with hand application of dyes. In brief, a special film is exposed and developed to form a positive silver image, which is bleached to remove the silver and then dyed with a black dye which is taken up in the same region of the silver image. After the film is backed with a liquid which dries to form an opaque white, the face side is colored by applying appropriate colors with hand brushing. A wide range of control of the hue and saturation was said to be possible.

A third series of articles on patents related to color photography was published (*Brit. J. Phot.*, Jan. 10, 1941, et seq.). A bibliography on color photography was compiled by Brode covering books, sections of books, monographs, and pamphlets which had appeared from 1924 to June 30, 1939 (*Brit. J. Phot.*, Jan. 17, 1941, et seq.).

Military Photography. Still photographs, slide films, and motion pictures were used extensively for training purposes in all branches of the military and civilian defense program. The number one photographic school of the U.S. Army Signal Corps was located at Fort Monmouth, N.J., where the men were trained about thirteen weeks before assignment to an active photo-section (*U.S. Camera*, Sept., 1941). In collaboration with the Academy of Motion Picture Arts and Sciences at Hollywood,

California, the Signal Corps had in production a program of 160 training films (*Mot. Pict. Herald*, Mar. 8, 1941). A special training program for officer instruction of the Signal Corps had been in progress for nine years in Hollywood with the cooperation of the Academy. Training programs and research work for the U.S. Army Air Corps were centralized at Logan Field near Denver, Colorado, and at Wright Field, Dayton, Ohio. The U.S. Navy also was training a photographic personnel, and maps for various branches of the army, navy, and air corps were made at the Engineering Reproduction Plant of the Corps of Engineers located at Washington, D.C.

Many types of specialized equipment was required for military use, such as trailer darkrooms, collapsible dark tents, a wide variety of cameras, portable developing outfits and printers for quick-work photography, synchronized flash-bomb apparatus for night photography, and numerous other items. Special airplanes were constructed for aerial reconnaissance photography. These were fitted with camera openings in the top, sides, and floor and with resilient mountings for supporting the cameras (*Pop. Phot.*, Jan., 1941; also *Amer. Cinemat.*, Mar., 1941). Improved lenses and sensitive materials made possible much sharper photographs, although reconnaissance work for tactical purposes had to be done at altitudes around 30,000 feet due to the great range and accuracy of anti-aircraft fire. Besides fast panchromatic films, sheet Kodachrome and very high-speed infrared films were reported to have been used with success (*Military Eng'r.*, Sept., 1941).

Flares were usually dropped by the Royal Air Force to locate their targets for night photography, the camera shutter was opened and when the flash bomb exploded the flash operated a photocell mechanism which closed the camera shutter. Photocells were used by the U.S. Army Air Corps to operate the camera shutter simultaneously with the maximum intensity of the light of the flash bomb (*Amer. Phot.*, Apr., 1941; also *Engineer*, Dec. 27, 1940). It was common practice to mount small cameras using 16-mm. film in the wings of combat airplanes and operate them automatically in synchronism with the firing control of the armament of the plane (*Phot. J.*, Apr., 1941).

Black lacquers which transmitted infrared radiation were used to coat photoflash bulbs in England for "black-out" photography of air-raid casualties, automobile accidents, and other incidents occurring at night. Similar types of lamp were made in this country by the Wabash Photolamp Corporation and by the General Electric Company.

For counter-espionage work, the U.S. Federal Bureau of Investigation used cameras of many types and several instances were described by Toombs of the value of photography in solving espionage cases (*Pop. Phot.*, May, 1941). A group of 33 spies were convicted in a New York court in December after a trial lasting several months, during which much photographic evidence was introduced to prove their activity against the government (*Life*, Dec. 29, 1941).

A very rapid method of mail transportation between the British forces in Egypt and the Near East was put into operation in April. It consisted in photographing the letters on 16-mm. film, sending them to England by airplane, and enlarging them to one-half their original size for mailing to their destination within the country. A special form was used for the original letter which had a space for the address to be printed by the sender in block letters, so that this could be used later with an

envelope having a cut-out opening. Each 100-foot roll of film held about 1,700 pages of letters. One hundred rolls, containing approximately 160,000 letters, weighed only 40 pounds, compared to an estimated 6,000 pounds in standard size in an envelope. The plan was called the "Airgraph System"; it was developed by the British Post Office with the cooperation of Kodak, Limited (*Amat. Phot.*, May 2, 1941).

Industrial Photography. Two important uses of the camera in aircraft production were described by Washburn of the Lockheed Aircraft Corporation and these are typical of such work that was being done in other airplane plants. The first use was the production of duplicate templates or work patterns, which were photographed directly onto a sensitized metal sheet, wood, transite, etc., and cut out very accurately to make the template. The sensitized coating for the sheets was obtained from a new product called "Eastman Matte Transfer Film," described later in this review. The second use was the production of blueprints from photo-tracings.

Two cameras were developed for copying the detail assembly drawings; one was portable and could be taken to the loft-room where the drawings were made, and the other was located permanently in the photographic department. The portable camera was shaped like a wigwam, 8½ feet high, and was mounted on rubber-tired wheels. It was fitted with a Cooke, F/12.5 lens of 19-inch focal length to make a fixed one-quarter reduction onto a 14 x 17-inch glass plate. The permanent camera was also used as a projector when the negatives were enlarged onto the photo-template sheets. This camera was equipped with a Goerz, F/16 lens of 70-inch focal length. It was 6 inches in diameter and weighed 18 pounds. After enlargement of the template drawing to exact size on the sensitized metal, the sheet was hooked onto an electric conveyer to move it to the developing room where it was lowered with an overhead crane into the developer and other processing solutions. Immediately previous to making the exposure onto the metal sheet, the negative drawing was projected onto sensitized tracing cloth from which blueprints could be printed. It was stated that these procedures cut down the time to one-tenth that required previously for such work and effected a saving of several hundred thousand dollars in production costs (*Aero Digest's Aviation Eng.*, Sept., 1941).

Another method of photo-template production made use of a special lacquer that phosphoresced after it had been exposed to X-rays. The drawing was made on a board or metal surface after it had been sprayed with the lacquer. While it still glowed with a pale phosphorescence after exposure to weak X-rays, a sheet coated with Matte Transfer Film was brought into close contact for several minutes. After development, a negative image was obtained. A positive image could be produced by exposing a photographic plate to the phosphorescent drawing first and then printing from the developed plate onto a sensitized metal sheet. Although this phosphorescent method was very rapid and economical, it was limited to a one-to-one ratio of reproduction.

Accurate photographic records of important buildings in London and other cities in England were being made under the auspices of the National Buildings Record with the collaboration of the Royal Photographic Society. Two plans were being carried out: (1) straightforward photography, and (2) calibrated photographs from which dimensional plans and elevations could be derived

for aiding postwar reconstruction (*Phot. J.*, Jan., 1941; also June, 1941).

Photomechanical Processes. A high standard of quality was retained in the processes of photo-mechanical reproduction even though the war needs resulted in a drastic reduction in paper consumption with accompanying necessary use of cheaper paper stocks for magazine and book printing.

Hand correction of color printing plates made from artists' drawings was said to have been minimized greatly by the introduction of a method called the "Fluorescence Process." By this method, sketches made with special pigments were photographed by illuminating them with arc lights covered with filters, which transmit ultraviolet rays and some visible light. A novel copyboard hood was used to hold the filters and obtain proper balance of light on the sketch (*Photo-Engravers Bull.*, Nov., 1941).

A new method for making fine line halftones (120 to 300 per inch) was demonstrated publicly for the first time at Cincinnati, Ohio, on September 18. It was called a contact screen process. The shortcomings of the standard halftone screen, such as difficulty of contrast control, lack of sharpness of fine lines, and long exposure for certain types of work, were said to have been practically eliminated by the new method. Essential features of the process were (a) the making of a continuous tone magenta (dye image) negative, and (b) the printing of this magenta negative by contact through a special orange, vignetted dot screen onto an orthochromatic film of very high contrast. Contrast was controlled by placing yellow (for higher contrast) and rose (for lower contrast) filters over the printing light source. The final result (illustration, map, etc.) was printed from this screen positive by deep-etch offset lithography. The production of unusually fine-screen maps by this method was reported by the Engineering Reproduction Plant at the U.S. War College, Washington, D.C. (*Photo-Engravers Bull.*, Nov., 1941).

The introduction of the masking process several years ago resulted in a noticeable improvement in the quality of the cuts made from color separation negatives. Panchromatic plates or film were used to make the mask by exposing them through the Kodachrome with colored light. After development to a very low contrast, the negative mask was bound to the Kodachrome before making color separation negatives from it. In November a better material was made available known as "Kodak Masking Panchromatic Film." It was supplied as a stripping film from which the emulsion on a thin support could be stripped while dry and cemented onto the Kodachrome. The exposure was made with red light through the Kodachrome and the mask developed while attached to it. Exact registration was assured and separation negatives could be made easily, which were said to require very little hand correction when making the printing plates.

Motion-Picture Photography. An expanding program of production of motion pictures for defense purposes and a loss of most of the European market caused an appreciable drop in total footage of pictures for theater use. The United States government established projection facilities in all of the training centers and arranged for showings of many of the feature pictures. More color pictures were produced than ever before. A total of 18 feature pictures in color were delivered during the 1940-41 season and 23 pictures were promised for 1941-42. The majority of these were made or contracted for in technicolor, and the balance in cinecolor. It

was estimated that about 100,000,000 feet of technicolor prints would have been delivered by the end of the year. It was reported by Kalmus that a monopack (single negative) film was being used by the Technicolor Company on an experimental, semi-commercial basis at their Hollywood laboratory (*Film Daily*, July 23, 1941).

An announcement was made in September that good quality 35-mm. technicolor prints could be made from 16-mm. Kodachrome prints (*Amer. Cinemat.*, Sept., 1941). Details were given of the design of processing equipment for the making of two- or three-color prints by the Gasparcolor process by the Hollywood Color Film Company. This process requires color separation positives from a color film, such as Kodachrome. The positives are printed on a special reversal type positive film containing dyes; the three-color film stock having on one side two emulsion layers containing magenta and yellow dyes, respectively, and on the opposite side a third emulsion containing the blue-green (cyan) dye (*Amer. Cinemat.*, Nov., 1941).

Extensive use was made of motion pictures as training films in many defense industries in an effort to shorten the time that was usually required to prepare individuals for specialized work. For example, a series of eight sound films was used to supplement machine-shop instruction for apprentices who were learning to operate various types of machines (*Factory Management*, Oct., 1941).

Applied and Scientific Photography. An estimated total of four million pages of the British House of Commons Sessional Papers, comprising the record for the entire nineteenth century, were being copied by the microprint process. A master positive matrix was prepared first and a reduction made from this matrix to 1/300th the original page size onto a special diazo paper. Each page of 6 x 9-inch size of the final microprint contained 100 pages on the front and back, so that an 800-page volume was printed completely on four microprint sheets. A special type of viewing device, called the Readex projector, permitted rapid and convenient examination of any page on each microprint (*J. Documentary Reproduction*, June, 1941).

It was announced by New York University that candidates for the doctorate degree would be allowed to publish their theses on microfilm. By this method, more data could be included at a lower cost, and a great saving in storage space effected (*N.Y. Times*, June 22, 1941).

Many valuable papers, documents, and books were destroyed or damaged by the great fire of London, started by the bombing raid of December 29, 1940. The charred records were photographed in various ways when possible to salvage them. One scheme consisted in shining a very narrow, intense beam of light on the page while making the exposure (*Science*, Aug. 1, 1941). Another plan required the application of several layers of a chloral hydrate solution until a mass of crystals was formed that gave a "clarifying" effect on the inked or printed portions of the document. A copy was then made on a contrasty, non-color sensitive plate (*Nature*, Apr. 5, 1941).

The great aurora of September 18, one of the most brilliant displays ever seen in this country, was photographed by many observers (*Tech. News Bull.*, U.S. Bur. of Standards, No. 294, October, 1941; also, *Sky and Telescope*, November, 1941). Motion pictures and other photographic records were made of the total eclipse of the sun as seen on September 22, at Lintao, Kansu Province, China (*N.Y. Herald Tribune*, Sept. 22, 1941). Washburn and party made the first successful ascent of Mt.

Hayes (13,800 ft.) in Alaska in August and obtained several hundred feet of remarkable Kodachrome pictures as well as other photographic data. Ewing lectured on his work and that of his associate, Clarke, on the photography of the ocean bottom at depths ranging from 125 to 3,000 feet (*Science*, Feb. 7, 1941).

Radiography. The induction of more than a million men into the armed forces of this country resulted in a great increase in the use of X-ray film. A rapid preliminary check-up of the chest was usually made by using small sheet film of 4 x 5-inch size or in some cases miniature 35-mm. roll film. More complete radiologic examination followed if pathologic conditions were found. For diagnostic purposes, X-ray materials were being used more than ever as a supplement to medical examination of the wounded.

New fine-grain, high contrast, industrial X-ray films were being used extensively for checking flaws in airplane castings, seams on armor plate, parts for tanks, trucks, and guns. The General Electric Company completed delivery and installation of a number of 1,000 kilovolt X-ray units with which heavy thicknesses of steel, as great as 7 inches, could be penetrated with comparatively short exposures (*Welding J.*, October, 1941; also, *Iron Age*, Sept. 18, 1941).

Physical Measurements. Active work was continued by the various subcommittees of Committee Z-38 of the American Standards Association on the problem of photographic practice standardization. Proposed American standards published for trial and criticism included the following: contact printing equipment (Z38.7.1); projection equipment for film strips, 35-mm. film viewers, and microfilm readers (Z38.7.2); lantern-slide projectors (Z38.7.3); reflection-type projectors (Z38.7.4); testing printing and projecting equipment (Z38.7.5); film-pack tabs (Z38.1.1); film-pack cases (Z38.1.2); dimensions for 70-mm. used for recording work, e.g. seismographs, oscillographs, etc. (Z38.1.3) (*Photo. Trade News*, July, 1941; also September, 1941). Arnold reported that the use of a Dewar flask and a standard agitation technique for evaluation of film speeds as proposed in 1940 by the British Technical Committee PHC/1 had been checked in several laboratories in the United States and would be considered for the proposed American standard specification (*Amer. Phot.*, February, 1941).

A test of lens resolution was described by Gardner, which consisted in photographing two new types of resolving power charts (Circular No. C428 of the U.S. Bur. Standards). Technical details of the application of the electron microscope to the study of photographic phenomena were published by Hall and Schoen (*J. Opt. Soc. Amer.*, April, 1941).

The factors affecting the photography of objects through atmospheric haze were evaluated by Clark for black and white and for color photography (*Photo-Technique*, July, 1941).

Additional fundamental information on the problem of tone reproduction was presented in a comprehensive paper by Jones and Condit on the brightness scale of exterior scenes and the computation of correct photographic exposure. A formula for exposure calculation based on the *minimum brightness* of the scene was derived which takes into consideration the statistical average characteristics of cameras and lenses of predominant use. A factor to compensate for flare light effects is included (*J. Opt. Soc. Amer.*, November, 1941).

Manufacture of Sensitized Materials. One of the most

significant developments over the past half century in the field of glass manufacture was the commercial production of a new type of optical glass by the Eastman Kodak Company. Suggestions made several years previous by Dr. George W. Morey of the U.S. Geophysical Laboratory initiated this work. The new glass has no silicates but includes certain rare elements such as tantalum, lanthanum, and tungsten. It has a much higher refractive index than other glasses of the same dispersion. For the present it was understood that most of the production would be used in military instruments.

An announcement was made in December of the first steps that were being taken to establish an optical glass industry in Canada. Production of lens glass in a \$7,000,000 government-owned plant was said to have begun (*Nat. Phot. Dealer*, December, 1941). A review was published by Nelson of the growth of the Bausch & Lomb Optical Company. Over fifty types of glass were being manufactured by this concern (*Photo-Technique*, July, 1941).

The discovery and development of methods of manufacture of film products which could be stripped while dry from a paper support and laminated onto metal, wood, or other sheet material was regarded as an accomplishment of the first order in the ranks of film manufacturers. As noted previously, this product, known as "Eastman Matte Transfer Film," was being used extensively in the airplane and automotive industries for the preparation of photo-templates. A new paper, called "Eastman Autopositive Paper," was announced in October for use in making black and white positive prints directly from Kodachrome transparencies. Observations on latent image stability of motion-picture film were reported by Famulencr and Loessel (*J. Soc. Mot. Pict. Eng.*, April, 1941).

New Apparatus. During the past few years a large number of small cameras have appeared on the American market. Many of them were made in this country, but quite a few were manufactured abroad. Included in the latter group were the two best known precision-built instruments, the Leica and the Contax. No American-made amateur camera had the fine workmanship of these cameras until the year 1941 when the Ektra and the Medalist were placed on sale in this country. Engineering skill and scientific precision of a very high order were shown in the manufacture of these cameras. Other new cameras were the Super D Graflex with built-in open-flash synchronizer and automatic diaphragm-control; the Graphic View, a 4 x 5-inch view camera fitted with an inverted V-bar sliding-bed support, the Ikoflex I, a twin-lens, reflex-type camera taking pictures 2¼ inches square.

A description was prepared by Clark and Laube of a new 35-mm. sound motion-picture camera in which all fast-moving parts were said to be so quiet that the camera could be used without any sound-proof housing (*J. Soc. Mot. Pict. Eng.*, January, 1941). Improved flash lamps were marketed including blue bulbs for use with daylight Kodachrome, and a midget lamp which used no magnesium foil or wire but employed a combustible paste on the lead-in wires (*Pop. Photog.*, May, 1941). Several varieties of lamps emitting considerable infrared radiation were introduced for the drying of film in photo-finishing laboratories (*Current Photog.*, June, 1941). The ever-growing field of cine equipment for 16-mm. sound-film was expanded again by the introduction of five new models of sound projectors made by the Eastman Kodak Company.

Two different types of stereo projectors were demonstrated successfully during the year, one by the Society for Visual Education, and the other by





FOCUS ON WAR

The great fire of London on the night of December 30, 1940—one of the most remarkable photographs to come out of the war

(London Daily Mail)

Quick-Work Photography—a reconnaissance photograph made by members of the U.S. Army Air Corps, exposed, developed, and printed in an airplane about three minutes.

(Official Photograph, U. S. Army Air Corps)

the Three Dimension Corporation. The former type used 2 x 2-inch glass slides or slide films; the latter was designed to take standard 3¼ x 4-inch slides or smaller slides with the aid of an adapter. Polaroid filters were required for each apparatus and for the one viewing the pictures.

Additional apparatus were plastic safelights, improved synchronizers for flash photography, new models of enlargers and slide projectors, a daylight-loading developer tank for 35-mm. film, darkroom mittens made of thin, transparent Pliofilm, and parabolic, adjustable safelight lamps.

The Photographic Process. Although no actual shortages of chemicals restricted photographic processing, the possibility of such restriction was growing as the year closed. Substitutes for certain staple chemicals, such as developing agents, acetic acid, chromium salts, and borax, were under consideration. Wratten and Levenson discussed the use of "Kodolon" (para-aminophenol hydrochloride) as a substitute for Elon in motion-picture positive film developers (*Brit. Kinet. Soc. J.*, April, 1941; also October, 1941). James continued his investigation of the mechanism of development with a report on developing and non-developing agents (*J. Amer. Chem. Soc.*, December, 1940). He also published some experimental bases for the development process (*Photo-Technique*, December, 1940; also January, 1941). A new fine-grain developer and replenisher known as "Finex" was announced by Agfa-Ansco, which was said to give low graininess without sacrifice of film speed (*Photo-Technique*, October, 1941). Other proprietary products were wetting agents for the prevention of non-uniform drying of films and plates, stop bath and fixing bath testing solutions, selenium toners, and liquids to insure print flexibility. Hanson published a series of articles on various aspects of the photographic process (*Amer. Phot.*, July, 1941, et seq.). For photoflash lamps, flashbulbs, see ILLUMINATION.

Bibliography. The more notable books of the year were D. Charles, *Photographic Enlarging*, London, N. Barrett and R. Wyckoff, *How to Build and Equip a Modern Dark-room*, San Francisco; H. B. Wobbe, *A New Approach to Pictorial Composition*, East Orange, N. J.; B. Abbott, *A Guide to Better Photography*, New York; F. R. Frappie and R. H. Morris, *Copying Technique*, Boston; W. Mortenson, *Flash in Modern Photography*, San Francisco; A. R. Greenleaf, *Chemistry for Photographers*, Boston; T. T. Baker, *Photographic Emulsion Technique*, Boston; A. S. C. Lawrence, *The Scientific Photographer*, New York; *The Film Index*, compiled by the Works Progress Administration, New York; *Directory of Microfilm Sources*, compiled by R. C. Cibella, New York; several new *Photo Guides* were published by Focal Press, Ltd., London, and additional numbers of the *Little Technical Library* were issued by Ziff-Davis Publishing Co., Chicago, further sections of the *Photo-Lab Index* by H. M. Lester were published by Morgan and Lester, New York. The first number of a new encyclopedia, *The Complete Photographer*, appeared in September. It was edited by W. D. Morgan and issued three times each month by the National Educational Alliance, Inc., Chicago. Articles were written by experts in various fields of photography.

GLENN E. MATTHEWS.

PHYSICS. Electron Microscope. As an instrument of research, the electron microscope has proved itself during the past year of wider and more varied usefulness than any other single instrument. Extensive use has been made of the new commercially built instrument of the Radio Corporation of America perfected late in 1940, as reported in the YEAR BOOK of that year. The first instrument for industrial use was put to work in January in the Camden Research Laboratories of the American Cyanamide Company. This instrument is compact and has built into it all the necessary accessories—the transformer to provide the 60,000 volts required to accelerate the electrons, apparatus to keep the voltage steady to within one volt, and the pump necessary

to maintain the vacuum. Observation may be visual by means of a fluoroscope, or the latter may be turned up out of the way to permit a photograph to be taken. Specimens can be inserted or removed through an air-lock without breaking the vacuum. Direct magnifications of 2,000 to 30,000 diameters are obtained, but by further photographic enlargement magnifications up to 100,000 diameters or more can be obtained without loss of detail.

Exciting as the highest magnifications may be, it is important that the magnification can be regulated at will down to the point where it joins the possibilities of the optical microscope. Users of microscopes wish to be able to vary the magnifying power continuously from the lowest to the highest. More important than magnification, is the resolving power, indicated by the smallest details that can be distinguished. As with the ordinary photograph, it is useless to magnify the image beyond the point where these details become blurred. Theoretically, the resolving power is limited by the wave length of the radiation used. For 60,000-volt electrons the equivalent wave length is 0.05 angstrom units or about $\frac{1}{100,000}$ that of light. In practice the full theoretical resolving power is never attained. For the RCA microscope under ordinary working conditions, it is about 100 angstrom units, 10 millimicrons or $\frac{1}{2,500,000}$ of an inch. The best that has been obtained with any electron microscope is 30 angstrom units.

Dr. V. K. Zworykin, J. Hillier, and A. W. Vance of the RCA Research Laboratories experimented with higher voltages up to 300,000. They found that increase in penetration, enabling thicker specimens to be used, was the only advantage obtained, and that there was no advantage in using a higher voltage for specimens that were transparent to the lower voltage of the commercial instrument. Higher voltage also gave a great deal of trouble, chiefly because of the hard X-rays produced by the speedy electrons. Because the commercial instrument requires thin specimens that are transparent to the electron beam, it cannot show the surface structure of opaque materials, often important in metallurgy. This, however, Dr. Zworykin has made possible by making a thin plastic replica of the surface that is transparent to the rays.

An electron microscope with a built-in optical microscope was patented in February by Ladislaus Marton, also an RCA scientist. This attachment makes it possible to watch the specimen while it is being photographed, although at a lower magnification, so that one may see if it undergoes any change during the electron bombardment, a thing which sometimes happens and which would at least render the results obscure.

The electron microscope has been used in the study of thin films, electro-deposits, age hardening, solid solubility, super-lattices, colloids, etc. A photomicrogram of a rubber-like synthetic, polymerized vinyl chloride, magnified 100,000 times, clearly shows small black dots which are taken to be actual large size molecules. The greatest achievement of the electron microscope during the year was to make visible for the first time the influenza virus. This turned out to be a tiny spherical particle 11 millimicrons, 110 angstrom units, in diameter. This, it will be noted, is close to the limit of the resolving power of the instrument. Photographs of the virus were made late in the year by Dr. Leslie A. Chambers and Dr. Werner Henle at the University of Pennsylvania.

Million-Volt X-ray Machines. The towering two-story X-ray machine that formerly was necessary when the voltage neared the million mark and which re-

quired a specially built house or room to accommodate it, will soon be a thing of the past. Several small compact 1,000,000-volt outfits were made by the General Electric Company and placed with several manufacturing companies, including their own. They are used for the detection of flaws in heavy castings, and can photograph through five inches of steel in two minutes, a job that previously required three and a half hours. The new machine weighs only 1,500 pounds, about a third that of its immediate predecessor, and is easily carried around by the traveling crane of a machine shop wherever its work is needed. It is hung on gimbals so that it can be pointed in any direction.

The great reduction in size was made possible principally by a new type of transformer, called a resonance coil, designed by W. F. Westendorf, which dispenses with the usual iron core. The tube, also reduced in size from the foot or more of the original high-voltage tubes to $3\frac{1}{2}$ inches in diameter and to 30 inches in length in place of the former 14 feet, was placed inside the resonance coil. Further reduction in size was made possible by using Freon gas under pressure as an insulator in place of oil. This gas, which is used in refrigerators and is known chemically as dichlorodifluoromethane, saves space because it is a better insulator. This arrangement of the parts also makes the outfit shock-proof, because the resonance coil, which steps the voltage up to the million volt mark, is entirely enclosed in the steel casing of the unit. Only low voltage cables are outside, where they can be handled. The leads from the various sections of the transformer to the tube are also made thereby very short. See **ELECTRICAL INDUSTRIES**.

Electron Induction Accelerator. An apparatus for whirling electrons up to an energy of 20,000,000 volts, more than twice that obtained by any previous accelerator, and to a speed within a tenth of one percent of that of light, was also constructed at the General Electric Laboratories. This machine was patterned after a smaller 2,300,000-volt induction accelerator devised and built by Dr. D. W. Kerst at the University of Illinois, and described in the **YEAR BOOK** for 1940. The electrons are liberated by a hot filament inside a doughnut-shaped glass tube exhausted of air. The electrons are accelerated by the alternating field of an electro-magnet energized by a 600-cycle electric current. The entire acceleration takes place during a quarter of a cycle, $\frac{1}{4}$ of a second. During that brief interval the electrons are whirled around inside the doughnut-tube some 400,000 times and travel some 200 miles, at the end of which they strike a target and produce X-rays of equal energy and having a penetrating power exceeding the gamma rays of radium.

If a loop of wire were placed in the position of the orbit of these whirling electrons, an alternating current of electricity would be induced in it by the fluctuating magnetic field. This is simply Faraday's principle of magnetically induced currents. This alternating current is nothing other than a stream of electrons that takes place in the wire, first in one direction then in the other. With the wire removed the same streaming of electrons occurs. But without the wire to guide them, the extremely delicate problem arose of focussing the electron streams by means of magnetic forces, so that their paths would be nearly circular. But not quite circular. A radial component of magnetic force on the electrons had to be arranged so that they would spiral gradually inward. A target was so placed that the electrons would strike its edge at the moment they acquired their maximum velocity. This was accomplished by the proper shaping of the conical pole

pieces, determined partly by calculation and partly by trial and error.

If the electrons had not struck the target, in the second quarter cycle when the magnetic field is decreasing they would have been decelerated and brought to rest. In the third quarter cycle they would have been accelerated in the opposite direction. The latter actually takes place in the machine with fresh electrons from the hot filament, so that the target is struck from both sides and gives an intermittent beam of X-rays. At present, only X-rays emerge from the machine. The electrons are used up in producing these rays. But means are being studied of utilizing the electron streams in other ways or of possibly getting them out of the machine.

While the electron induction accelerator appears to be a sort of cyclotron, it is in many ways very different and its manner of operation is quite different. The cyclotron can only accelerate heavily positively charged atomic particles, protons, deuterons, etc., which are 1,800 times or more heavier than electrons. For the same voltage, the cyclotron is enormously larger, and the speeds attained by the particles are much lower. The cyclotron uses a steady magnetic field. The pole pieces are flat. The acceleration takes place in a flat circular box which has been cut diametrically in two. The two pieces are called the dees because of their "D" shape. The upper and lower plates form a condenser. The two dees are oppositely charged and periodically reverse their polarity, being charged by an oscillating current of the proper frequency. During each cycle the atomic particle makes one revolution, spirals outward, and finally emerges from the machine, where it can be used for any purpose required.

The induction accelerator, on the other hand, uses an alternating magnetic field, has conical pole pieces, produces the entire acceleration during a quarter cycle, during which time the electron makes hundreds of thousands of revolutions and never gets out of the machine. The induction accelerator was called by its inventor, Dr. Kerst, the rheotron, but was rechristened by the General Electric Company, the Betatron. Both names are appropriate, because the Greek word, *rheo*, means to flow, while beta rays is the name that was given to the electron emission of radium.

This machine has now been sent to the University of Illinois where it will be installed in the University's new Abbott Power Plant. Meanwhile the General Electric Company has begun construction on a still larger machine that will speed the electron whirlpool up to 100,000,000 volts. With this machine it is believed that X-rays as powerful as some of those of the cosmic rays can be produced, so that some cosmic-ray phenomena can be produced and studied in the laboratory.

Cosmic Rays. Some semblance of an orderly theory concerning the cosmic rays is now possible. Since we cannot get up above the atmosphere and actually observe the incoming, or primary, cosmic rays and measure them, some hypothesis must be made about them. For the present, that theory must serve which explains the most with the least.

Dr. W. F. G. Swann of the Bartol Research Foundation has summarized the theory based on the assumption that the incoming rays are of one kind only; namely, heavy, positively charged particles, probably protons. Any other hypothesis, Dr. Swann states, leads to some contradictions with the facts. By processes at present unknown, he continues, the primary radiation gives birth, probably indirectly, in the upper atmosphere, to mesotrons—middle weight atomic particles. Those mesotrons which are born approximately at rest will have such short

lives that they will disintegrate before they have traveled 1,000 feet, giving rise to electrons which emerge on the average equally in all directions. High speed mesotrons, which penetrate to and disintegrate at lower levels, will give rise to electrons having a predominantly forward direction.

This hypothesis explains as well as any other the main facts of cosmic radiation and, in addition, the fact that at sea level the radiation comes prevalingly from overhead, while at high altitudes it comes more or less equally from all directions, horizontal as well as vertical. If any of the incoming primary rays were electrons, Dr. Swann declared, there would be a strong asymmetry in their distribution both vertically and horizontally in the high altitude measurements, which asymmetry has not been found. Such asymmetry would be due to the strong effect of the earth's magnetic field on the light electrons. Protons, 1,800 times as heavy, are much less affected.

Further support of this hypothesis is afforded by the measurements of V. C. Wilson, M. Schein, W. P. Jesse, and F. O. Wollan of the University of Chicago, carried out by airplane and balloon to a maximum height of $12\frac{1}{2}$ miles above the earth. At the maximum height the atmospheric pressure is about 2 centimeters of mercury or $\frac{1}{38}$ of its sea-level value. This is practically the top of the atmosphere, for although some air probably extends another hundred miles or more, 95 per cent of it lies below this level. A primary electron, in order to penetrate the earth's magnetic field, would have to have an energy of about three billion volts—yet would be stopped by a few inches of lead. Schein and his collaborators found that near the top of the atmosphere, varying the thickness of lead, shielding their apparatus, up to seven inches had practically no effect on penetrating power of the particles they measured. These could not be primary electrons. Furthermore they concluded that at the highest altitude reached there were no electrons of energies between a billion and a trillion volts.

The theory that the cosmic rays are born of the suicide of atoms in outer space, propounded by Dr. R. A. Millikan, head of the California Institute of Technology, received some support from measurements made by his associates in India near the magnetic equator. The theory is that the rays are produced by the complete annihilation of atoms of helium, carbon, nitrogen, oxygen, and silicon with the generation of two high-speed electrons. These five elements are the most abundant in the cosmos with the exception of hydrogen. Calculations show that their annihilation would produce electrons having energies of 19, 56, 66, 7.5, and 13.2 billion electron volts, respectively. On account of the earth's magnetic field, only the most energetic of these rays, those due to silicon, would come down near the magnetic equator. A little further north those from oxygen would appear, and so on to the poles. If this were true, the intensity of the radiation, instead of increasing continuously from the equator to the poles, would do so by a series of sudden jumps or steps, forming a sort of cosmic ray spectrum. The observations made in India, coupled with previous work done farther north, were designated by Dr. Millikan as excellent evidence for the existence of such a spectrum.

New Measurements. Three fundamental quantities received new values during the past year: The mean distance of the sun, the astronomical unit, was announced as 93,003,000 miles, with the very small probable error of 8,000 miles, in place of the previously accepted figure, 92,780,000. The new figure, more than 200,000 miles larger than the old,

has been somewhat upsetting to astronomers. It is the result of ten years calculations by Dr. H. Spencer Jones, Astronomer Royal of England, on observations of the asteroid Eros at its last close approach to the earth in 1931. The time consumed by the calculations was due in part to the disturbed conditions in Europe, which delayed the arrival of data from distant parts of the world. The present calculation is based entirely on celestial triangulation. A calculation based on gravitational perturbations is yet to be made. Until this is completed, no final revision of the solar distance will be made.

A new value of the velocity of light was announced by Dr. W. C. Anderson of Harvard University as the result of 2,895 observations. The new value is 299,776 plus or minus 14 kilometers per second (186,272 plus or minus 8.7 miles per second). In 1935 Michelson, Pease, and Pearson gave the velocity as 299,774 kilometers per second, but the close agreement of these two measurements is regarded as more or less accidental. In view of the fact that each successive measurement of the velocity of light had given a value smaller than the preceding one, the suggestion had been made that the velocity was slowly decreasing with time. Dr. Anderson pointed out, however, that the probable errors of the earlier measurements were too large to warrant such a conclusion and that the later measurements were in excellent agreement. Furthermore, R. T. Birge pointed out in a private communication to Dr. Anderson that in all previous measurements adequate correction had not been made for "group velocity" in reducing the velocity in air and other materials to velocity in vacuo. Dr. Anderson took careful account of this correction in his own measurements and applying it to previous ones found that it had amounted in some instances to 7 kilometers per second. He concluded, "that the velocity of light is a constant as nearly as we can measure it at present."

A new measurement of the electron charge was made by V. D. Hopper and T. H. Laby at the University of Melbourne, using the oil-drop method. The value obtained was 4.8020 plus or minus 0.0013 ten-billionths of an electrostatic unit. This is in close agreement with the generally accepted figure 4.803.

Isotopes. Radioactive carbon of atomic weight 14 was produced in appreciable quantities by the cyclotron of the University of California. This isotope emits beta rays (electrons), but no gamma rays (hard X-rays). It has an unusually long life. No appreciable decay was detected in a batch nine months old. Dr. Samuel Ruben and M. D. Kamen, the University of California scientists who prepared the batch, estimated its half life to lie between 1,000 and 100,000 years. The larger figure is longer by far than the half life of radium, which is 1,600 years.

This isotope of carbon is extremely useful as a tracer atom in chemical, physiological, and biological processes. Ordinary carbon is composed of two stable isotopes of atomic weights 12 and 13, 99 per cent of the first and 1 per cent of the second. The radioactive isotope can be made either by battering C^{13} with deuterons or N^{14} with neutrons. At the University of California, it was made by subjecting two carboys of a concentrated solution of ammonium nitrate to a constant rain of neutrons for six months. This is a long way of preparing it, but Dr. Ruben and Mr. Kamen pointed out that it can be separated from mixtures of the other isotopes. Also it can be recovered and reconcentrated from processes in which it has been used.

Radioactive strontium and barium were produced in pure form for the first time by bombarding strontium oxide and lanthanum with deuterons obtained from the cyclotron. The former is useful in the treatment of bone cancer because, when taken internally, it goes straight to the bones. Four radioactive isotopes of germanium, an element similar to lead, were also produced by the cyclotron. A radioactive isotope of gold with a half decay period of 48 minutes was produced by bombarding mercury with fast neutrons. Other work on isotopes consisted mostly of continuing or confirming previous work or in the attempt to assign atomic weights to already known isotopes. Compare with CHEMISTRY.

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WATSON DAVIS (with MORTON MOTT-SMITH)

PIPE-LINES. See AQUEDUCTS; DEFENSE TRANSPORTATION, OFFICE OF; GAS INDUSTRY; SUPPLY PRIORITIES AND ALLOCATIONS BOARD.

PITTSBURGH. See FLOOD CONTROL.

PLANNING. The National Resources Planning Board continued its multifold activities for the whole country and in cooperation with State, county, city, and town organizations. Much attention was given to defense public works, defense housing, and public works programming. During 1941, the Board's records show, extensions were made to State planning enabling legislation as follows: City planning: Kansas, Oklahoma, Nevada, Utah. County planning: Oklahoma, Nevada. Regional planning: Oklahoma, Nevada. City zoning: Minnesota, Nevada. Town zoning: Michigan, Minnesota. County zoning: Oklahoma, Nebraska, Nevada, Utah. Airport zoning: Arkansas, Maine, Massachusetts, New Mexico, North Carolina, Oklahoma, Wisconsin, Wyoming. Subdivision control: by cities, Kansas; by counties, Utah.

The number of counties having organized planning under their control increased from 1,532 in 1940 to 1,893 in 1941. Forty-seven States had land-use planning divisions. Formal planning education is now given in some ten universities and colleges. Three of the largest cities of the United States—Chicago, Detroit, and San Francisco—have reorganized their city planning commissions, enlarged their staffs, and are working on comprehensive master plans.

Immense defense housing projects have been accompanied by progressive planning, some of it resulting in low-rent single-family houses. Unique among housing projects was one completed in November by the Federal Works Agency (q.v.) in accordance with a "park-living plan." It provides 254 houses for 700 families on a naturally wooded site between a county park and a river. By a special act of the New Jersey legislature the site was made into a new township called Winwood. Streets are laid out to conform to the bell-like shape of the site. The houses were erected by a contractor at the rate of two a day by using precut lumber. (*Engineering News-Record*, Nov. 20 and Dec. 4, 1941, New York.) See HOUSING AUTHORITY, U.S.; SOCIETIES under *Planning and Civic Association, American*. See AGRICULTURE under *Experiment Stations*; AGRICULTURE, U.S. DEPARTMENT OF under *Land-Use Planning*.

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M. N. BAKER.

PLANTS AND PLANT DISEASES. See BOTANY; ENTOMOLOGY, ECONOMIC. Compare AGRICULTURE and articles there listed. For BUREAU OF PLANT INDUSTRY, see AGRICULTURE, U.S. DEPARTMENT OF. **PLASTICS.** See CHEMISTRY, INDUSTRIAL; MOTOR VEHICLES.

PLATINUM AND PLATINUM METALS. The production of platinum in the United States increased enormously in 1941 as a result of the growing demands of the aircraft industry and the falling off of imports in 1940. Recoveries by United States refiners were chiefly from concentrates received from Canada and from crude platinum from Alaska, which in former years was exported to refineries in Great Britain. Consumption of platinum and platinum metals also increased in 1941, the greatest amounts going into the chemical and electrical industries. In former years the jewelry industry had been the largest consumer of platinum metals, especially of iridium. But the need for iridium to make contact points for magnetos, voltage regulators, and other electrical requirements of the military program caused the OPM in July, 1941, to ask refiners to cease using iridium in platinum alloys for all jewelry and to substitute 5 per cent ruthenium platinum alloys. In December a government conservation order prohibited the use of iridium and its alloys in the manufacture of jewelry. This put platinum on the list of essential defense and military metals.

Imports in 1941, January–September, were 215,069 oz.; 195,645 oz. were imported in 1940. Exports of ingots, sheets, wire, alloys, and scrap amounted to 13,388 oz., January–September, 1941, as compared with 55,027 oz. for the year 1940.

The price of platinum was \$36 per troy ounce during 1941; palladium, \$24; osmium, \$45–\$48; rhodium, \$125; ruthenium, \$35–\$40. Iridium jumped from \$148 an ounce to \$275–\$300 during November–December, 1940, and January, 1941. As a result the OPM undertook a study of military requirements and supplies. "No real shortage" of iridium was the verdict, and the price was consequently lowered to \$175 an ounce on Feb. 6, 1941, where it remained throughout the remainder of the year.

PLAY CO-OPS. See CONSUMERS' COOPERATIVES.

PNEUMONIA, PNEUMONITIS. See **MEDICINE AND SURGERY.**

POETRY. See **LITERATURE, ENGLISH AND AMERICAN; FRENCH LITERATURE; GERMAN LITERATURE; SPANISH-AMERICAN LITERATURES; SPANISH LITERATURE;** etc.

POISONS. See **FOOD AND DRUG ADMINISTRATION.**

POLAND. A central European republic, established Nov. 9, 1918. It was invaded by Germany Sept. 1, 1939, and partitioned between Germany and the Union of Soviet Socialist Republics by the treaty of Sept. 28, 1939. Warsaw, capital of the republic, surrendered to the Germans Sept. 27, 1939. See **YEAR BOOK** for 1939, p. 625 f., for data on Poland prior to its partition.

The Partition. At the outbreak of the war with Germany on Sept. 1, 1939, Poland had an area of 151,100 square miles and a population of 35,500,000, according to official Polish statistics. By the German-Russian treaty of Sept. 28, 1939, Germany occupied the western sector of 72,432 square miles with about 22,000,000 inhabitants, predominantly Polish, and Russia the eastern sector of 78,400 square miles with approximately 13,500,000 inhabitants, mostly Ukrainians and White Russians. See map in **YEAR BOOK** for 1939, p. 626

A German decree of Oct. 8, 1939, incorporated in the Reich about 35,512 square miles of Polish territory with a population of about 9,627,000. This area comprised the Polish provinces of Pomorze, Poznania, and Upper Silesia, which were ceded by Germany to Poland under the Treaty of Versailles, and the additional Polish districts of Suwalki, Ciechanow, Plock, Wloclawek, Kutno, Lodz, Konin, Kalisz, Bedzin, Sosnowiec, Biala, and Zywiec. Of the remaining German-occupied territory, an area of 225 square miles with some 45,000 inhabitants was transferred to Slovakia on Oct. 21, 1939. The rest—an estimated 36,921 square miles with a population variously estimated at 10,500,000 to 14,500,000—was created a separate German-controlled territory known as the Government-General of Poland, with its capital at Cracow.

On Oct. 10, 1939, the Soviet Government ceded to Lithuania part of the Vilna district taken from Poland—an area of 2,570 square miles with 457,500 inhabitants. The remainder of Soviet-occupied Poland—about 77,703 square miles with 11,924,000 inhabitants—was incorporated in the Soviet Union by vote of the Soviet Supreme Council (Nov. 1-2, 1939). According to Soviet figures, 41,650 square miles with a population of some 8,000,000 was annexed to the Ukrainian Soviet Socialist Republic and 34,000 square miles with about 4,800,000 inhabitants to the White (Byelo) Russian Soviet Socialist Republic. All of this Soviet-annexed territory was occupied by German forces beginning June 22, 1941. See **WORLD WAR.**

Government-in-Exile. The Polish Government-in-Exile established a temporary capital in Paris on Sept. 30, 1939; it was transferred to a site near Angers, France, on Nov. 22, 1939. President of the republic, Wladyslaw Raczkiwicz, who was appointed by President Ignace Moscicki upon the latter's resignation, Sept. 30, 1939. (The Polish Constitution empowered the retiring President to name his successor.) Premier, War Minister, and Commander-in-Chief of the Polish armed forces in Britain, Gen. Wladyslaw Sikorski. Premier Sikorski's non-party Cabinet, formed Sept. 30, 1939, was made up as follows at the beginning of 1941: Vice Premier, Gen. Kazimierz Sosnkowski; Foreign Affairs, August Zaleski; Information, Prof. Stanislaw Stronski; Labor and Social Welfare, Jan

Stanczyk; Finance, Henryk Strassburger; Interior, Prof. Stanislaw Kot; Justice, Marjan Seyda; Education, Gen. Joseph Haller.

The Polish Parliament was dissolved by Presidential decree in November, 1939. A decree of Dec. 19, 1939, authorized the appointment of a National Council of 24 members to serve in an advisory capacity to the Government. The National Council, with ex-Premier Ignace Jan Paderewski as president, convened in Paris Jan. 23, 1940 (see **YEAR BOOK** for 1940, p. 603 for membership). Following the capitulation of France to Germany, the Polish Government and National Council moved to London, where an Anglo-Polish military convention was signed Aug. 5, 1940 (see **YEAR BOOK** for 1940 for terms).

War Contribution. At the beginning of 1941, the Polish armed forces training in Great Britain and serving in the Middle East with the British were reported to total 50,000 men, including 3,000 airmen. There was a small Polish fleet of 3 destroyers, 2 submarines, and 14 other vessels serving with the British navy. Polish merchant ships aggregating more than 100,000 tons were assisting the Allied cause.

During a visit to Canada in April, 1941, Premier Sikorski signed an agreement with the Canadian Prime Minister on April 5 for the recruiting and training of a Polish armed force in Canada for service with the Allied armies overseas. Shortly afterward, the Polish leader conferred with President Roosevelt in Washington and received pledges of aid under the lend-lease act in equipping the Polish forces in Canada. After short visits to New York and Chicago to enlist the aid of Polish organizations in the struggle for Polish independence, General Sikorski returned to London.

The German invasion of the Soviet Union beginning June 22, 1941, brought a turn in the tide of war favorable to the Polish cause. The Government-in-Exile had considered Poland at war with the U.S.S.R. ever since the Soviet attack of Sept. 17, 1939, upon Eastern Poland. Immediately following Prime Minister Churchill's offer of aid to Russia against Germany, the Polish Cabinet in London agreed to collaborate with the U.S.S.R. in the struggle against the Reich on certain conditions. The same day the British Foreign Secretary stated in the House of Commons that Britain's pledge to restore Poland's independence remained unaffected by the decision to help Russia.

Polish-Soviet Treaty. Polish-Soviet negotiations were immediately opened, with British and American support. On July 30 a five-point agreement was signed in London. In it the Soviet Government declared the Soviet-German treaties of 1939 partitioning Poland to have lost their validity, while the Polish Government stated that it was not bound by any agreement with any third power directed against the U.S.S.R. Both Governments pledged immediate restoration of diplomatic relations and mutual "aid and support of all kinds in the present war against Hitlerite Germany."

The Soviet Government agreed to the formation on its territory of a Polish army, under a commander appointed by the Polish Government and approved by the Kremlin. This force was to be "subordinated in an operational sense to the Supreme Command of the U.S.S.R., in which the Polish Army will be represented." The Soviet Government also undertook to grant amnesty to all Polish citizens then detained on Soviet territory as soon as diplomatic relations were restored.

The treaty left unsettled the question of future Polish-Soviet boundaries. The Soviet Government

rejected a Polish request that it reaffirm the Treaty of Riga of 1921, by which Moscow recognized Poland's independence. Immediately after the signing of the July 30 accord, the British Foreign Secretary handed Premier Sikorski a note stating that the British Government had made no agreement with the Soviet Union affecting Polish-British relations, and that Britain did not recognize any territorial changes in Poland since August, 1939.

On August 6 it was announced that Gen. Wladislas Anders had been released from a Soviet prison camp and appointed commander of Polish forces in Russia. These forces were organized mainly from Polish war prisoners released by the Russians. A military agreement covering their maintenance and control was signed by Polish and Soviet authorities in Moscow August 16. Under the London treaty, the Polish Government assumed responsibility for the relief and rehabilitation of from 800,000 to 1,500,000 Polish citizens exiled to various parts of the Soviet Union after the Russian occupation of eastern Poland.

Premier Sikorski arrived in Moscow for conferences with Joseph Stalin on December 2. As a result of their meeting, a declaration of friendship and mutual aid between the two countries was issued. Premier Sikorski announced December 6 that the Polish army being organized in Russia would no longer be confined to two divisions—the previous limit—but would be “several times as large.” He previously stated that President Roosevelt and Prime Minister Churchill had given assurances that their Governments would equip “as many Polish soldiers as necessary.” The Soviet Government also helped to arm Polish forces in Russia.

Cabinet Split. Premier Sikorski's action in signing the Soviet treaty without obtaining Russia's pledge to respect Poland's pre-war frontiers caused a split in the Government-in-Exile. Led by Foreign Minister Zaleski, several Cabinet members resigned. Count Edward Raczyński, Polish Ambassador in London, succeeded Zaleski as Acting Foreign Minister. On September 3 Dr. Herman Lieberman, noted Polish Socialist leader, replaced Marian Seyda (Nationalist) as Minister of Justice. Stanislaw Mikolajczyk, Peasant party leader, became Deputy Premier and Minister of Interior, and Karol Popiel, leader of the Christian Democrats, Minister without Portfolio. Lieberman died October 21.

War with Japan. Upon unanimous resolution of the Cabinet, President Raczkiewicz on December 12 signed a decree declaring war upon Japan. The Government then sought an arrangement with the U.S. Government permitting conscription of Polish nationals in the United States for service in Poland's armed forces. The negotiations with the Czechoslovak Government-in-Exile for a Polish-Czechoslovak federation after the war were carried forward (see CZECHOSLOVAKIA under *History*).

Government-General of Poland. The Government-General was constituted Oct. 25, 1939, under Hitler's decree of October 12 appointing Dr. Hans Frank, Reich Commissioner of Justice, as Governor-General. While administered and controlled by the Germans, it was not a part of the German Reich. It remained outside the German customs area, although organized as an economic adjunct of the Reich. The Government-General was divided into four administrative districts of Cracow, Radom, Warsaw, and Lublin, and these in turn were subdivided into 10 provincial districts. All the districts were placed in charge of German appointees of the Governor-General. In the municipalities, Polish

mayors acceptable to the German district leaders were permitted to retain office.

According to Governor-General Frank, the population of the Government-General in March, 1940, was 14,500,000, including 12,000,000 Poles, 2,000,000 Jews, 400,000 Ukrainians, and about 60,000 Germans. He gave populations of the chief cities as follows: Warsaw, about 1,800,000; Cracow, 300,000; Czeszochowa, 140,000; Lublin, 140,000. After the German occupation of Soviet Poland in 1941, the Polish Ukraine was incorporated in the Government-General. The Jews were concentrated mainly in a reservation south of Lublin and in ghettos established by the Germans in Warsaw, Cracow, and many other cities and towns. In all Poland some 3,000,000 Jews were segregated in about 300 ghettos in September, 1941, according to a Jewish estimate. Of this total, 500,000 were in Warsaw. For an account of German methods and policies in the Government-General, see “The ‘Master Race’ in Action,” *The New York Times Magazine*, Apr. 27, 1941.

German Poland in 1941. Both in the Government-General and in the Polish districts incorporated in the Reich, the condition of the Polish population, described in preceding YEAR BOOKS, became increasingly desperate in 1941. The Germans actively pressed their policy of eradicating all Poles from the annexed areas except those peasants required to work German-owned farms. It was estimated in May, 1941, that 1,500,000 Poles had been deported from the annexed areas into the Government-General. About 1,000,000 others were conscripted for labor service in Germany proper. The places of these Poles were taken by Germans brought in from the Reich, the Baltic States, Eastern Poland, or other parts of Europe. German newspapers early in 1941 reported that in 15 months the Reich had settled 422,000 colonists in the annexed districts. Poles remaining in these districts were subjected to a ruthless Germanizing process. The ban on the use of the Polish language was extended early in the year to its use in prayers, sermons, and confessions in the churches. It was reported that Polish Catholic religious orders were being liquidated and the churches closed. The influx of Germans into the region was reflected in the opening of the new Reich's University at Poznan (Posen) on Apr. 20, 1941.

According to reports of trials published in the four German newspapers published in occupied Poland, death sentences pronounced during January, 1941, totaled 326. It was charged that many other Poles were killed without the formality of trial, particularly in mass retaliation for attacks upon Germans and upon Poles cooperating with the conquerors. A savage underground warfare continued between the German secret police and Polish patriots, who resorted to terrorism and sabotage. There were thousands of arrests in Warsaw and other cities. Prisons and concentration camps were said to be crowded, and the death rate among the prisoners extremely high. Following large shipments of requisitioned grain and livestock to Germany proper, the food shortage became acute early in 1941 and serious food riots were reported in various parts of Poland.

Polish resistance to the German conquerors continued. After the Russo-German war revived hope of liberation, a wave of sabotage and guerrilla warfare swept the country. Lines of communication of German armies operating in Russia were obstructed and damaged, despite numerous executions of suspected saboteurs. Underground Polish workers' organizations joined with other patriot

groups in the development of organized resistance to German rule. A manifesto attributed to leaders of 2,000 organized Polish workers' groups was published in London on August 9. It appealed for world aid against "Nazi totalitarian tyranny." It charged the Germans with killing more Poles since the occupation than in the fighting that preceded it, and with planning to transform the Polish masses "into German slaves." On August 26 the Polish Government-in-Exile reported that Prof. Casimir Bartel, former Premier of Poland, had been shot by the Gestapo in Lwow.

Early in October the Vatican issued a report stating that more than 40,000 Poles had been executed, 60,000 placed in jails and concentration camps, and 1,180,000 drafted for forced labor. The Inter-Allied Information Committee, representing the Allied Governments-in-Exile, announced in New York on November 19 that not less than 82,000 Poles had been executed and 30,000 had died in concentration camps during the German occupation. The plight of Polish Jews and those sent to Poland from other parts of German-occupied Europe was reported even worse than that of the Poles. The difficult food situation became steadily worse during the winter of 1941-42. The typhus epidemic that made its appearance in Eastern Europe ravaged parts of Poland.

Soviet Poland. Before the German occupation of Soviet Poland, the same story of repression and suffering came from the districts under Russian rule. According to the Polish Information Center in New York City, more than 1,500,000 Poles, Ukrainians and Jews had been deported to Siberia and other parts of the Soviet Union under conditions of the utmost hardship and suffering. Deaths among these deportees were reported to be abnormally high. All anti-Soviet elements within the occupied districts were subjected to organized plunder, nationalization of their property, forced labor, and general political persecution. Religious activities were systematically repressed.

See GERMANY and GREAT BRITAIN, under *History*; LABOR CONDITIONS under *Employment and Wages*; LEND-LEASE ADMINISTRATION; REFUGEES, ROMAN CATHOLIC CHURCH.

POLICE. See FEDERAL BUREAU OF INVESTIGATION; JUVENILE DELINQUENCY; RADIO.

POLIOMYELITIS. See CHILDREN'S BUREAU; PUBLIC HEALTH SERVICE.

POLISH NATIONAL CATHOLIC CHURCH OF AMERICA. See RELIGIOUS ORGANIZATIONS.

POLITICAL ECONOMY. Subjects in the field of applied economics are treated in this volume under the following heads: BANKS AND BANKING; BUSINESS REVIEW; CONSUMERS' COOPERATIVES; FINANCIAL REVIEW; LABOR CONDITIONS; LABOR LEGISLATION; SOCIALISM; SOCIAL SECURITY BOARD; RELIEF. See also the article on AGRICULTURE and the various crops, industries, minerals, public utilities, etc. Books on political science and economics for the general reader are to be found listed in the article, LITERATURE, ENGLISH AND AMERICAN, under *Economics and Politics*.

POLLS. See OPINION RESEARCH CENTER; UNION NOW.

POLO. Stewart Iglehart remained the lone ten-goal player in polo at the close of 1941, although he was defeated in the final games of the two most important tournaments, the national open and the Monty Waterbury Cup competition. The young

man was by far the best player on all fields, and when Cecil Smith, hard-riding Texan, was set down a peg, Iglehart stayed at the "dream" level. Michael Phipps drove his Gulf Steam four to both titles, when he rode with his brother Ben, Charley Von Stade, and Alan Corey. All in all, the polo season was poor, with most of the players either in action with the Army or Navy or out of polo action because of taxes and expenses. There was no indoor polo, aside from the intercollegiates, which were taken by Princeton at West Point.

PONAPE. See JAPANESE PACIFIC ISLANDS.

PONDICHÉRY. See FRENCH INDIA.

POPE PIUS XII. See ROMAN CATHOLIC CHURCH under *The Pope*.

POPULAR FRONT. See CHILE under *History*.

POPULATIONS. See UNITED STATES; articles on States and countries. For **POPULATION MOVEMENTS**, see IMMIGRATION, REFUGEES. For **ALIEN POPULATION**, see ENEMY ALIENS.

PORTO SANTO ISLAND. See MADEIRA ISLAND.

PORTS AND HARBORS. In spite of the vast expansion of the shipping industry, due to the national defense program and shipment of supplies to the British, few important works were undertaken by port authorities for two reasons: (1) in general existing facilities were adequate to meet all requirements; (2) difficulties in obtaining construction materials under the war priorities system. As a result, the principal activities in 1941 were in maintenance and rehabilitation. In port operation, however, an unusual feature is that several United States ports had American and British experts charged with the special duty of expediting the movements of trains and cars in the yards and on the dock tracks and the orderly loading of the ships.

Offsetting the limited construction activities of dock authorities are the activities of the Army and Navy authorities for military purposes. For example, at Charleston, S.C., an anchorage basin is to be dredged at a cost of \$1,800,000, and \$4,500,000 will be spent in rehabilitating the port terminal property, now used by the Army as an auxiliary supply base. At New Orleans about 900 ft. of new wharf will form an extension of the Poland St. wharf, purchased from the Port Commissioners by the War Department. At San Francisco the Navy Department built a large supply depot, of piers, wharves, and warehouses, while the War Department built similar facilities, as needed for a port of embarkation. The Navy also has a base at Bayonne, N.J., including a great dry-dock for battleships, and has been specially active in the construction of dry-docks of both the fixed and floating types at several Atlantic, Gulf, and Pacific ports. All these works by private and municipal interests and government authorities are independent of the great activities in shipbuilding.

The port of New York is peculiar in being composed of a dozen separate ports in two states, all located in and around the New York harbor, but all under the direction of the Port of New York Authority. There are vehicle and railroad tunnels under the rivers, and a railway freight tunnel across the bay is proposed. At Portland, Maine, and Fall River, Mass., additional facilities for tankers have been provided on account of the new pipe lines for pumping oil from Portland to Montreal and from Fall River to Waltham. The Portland work includes a pier 1,200 ft. long for berthing the ships to unload their cargoes. To provide improved facilities in the harbor at Boston, Mass.,

the State legislature has appropriated \$4,700,000 to purchase and rebuild one of the railroad piers, and it is hoped to begin work in 1942.

Of particular interest is the establishment of the Port of Pasco, at Pasco, Wash., as the head of navigation on the Columbia River. This new inland port is 332 miles from the mouth of the river and 242 miles above Portland, Ore. The river has a deep-water channel as far as The Dalles, 200 miles, beyond which it is navigable for boats drawing not more than eight ft. The Port District has a 200,000-bushel grain elevator, a petroleum tank farm and a public wharf with warehouse or transit shed and railroad connections; it has also acquired land for industrial sites.

At Montreal, Canada, berthing space has been ample, and the principal work has been in additional tracks and minor buildings. Electrical operation of the Harbor Terminal Railway has been abandoned in favor of steam. Modernization of the port of Vera Cruz, Mexico, is under consideration, involving the construction of new piers and other facilities. In England, a curious feature is the formation of the National Dock Labor Corporation to promote rapid loading, unloading and handling of freight and the quick turn-around of ships by establishing an adequate and mobile labor force. One of its objects is to secure regular employment and pay for transport workers.

Expansion of the original plans for extensive enlargement of the port facilities at Cape Town, Union of South Africa, has postponed the final completion, which is now expected in 1942. Dredging for the new basin and its deep approach channel is practically finished, and tracks have been laid on the reclaimed land, but the large classification yards are left for postwar construction. A dry-dock 1,250 ft. long is projected, large enough for battleships and the largest class of liners; it would be so divided by gates as to be used economically for smaller vessels, and also used as a commercial wet dock. While the cost would be about \$5,000,000, it is suggested that the sale of the large area of reclaimed land for industrial sites and other purposes would pay for the entire harbor project, including the dry-dock.

A new African west-coast port, established and fortified by the Vichy government of unoccupied France at Abidjan, on the Ivory Coast, is said to be part of a French-German scheme for control of the northwest coast, threatening the British port of Freetown and the Free-French port of Pointe-noire. In Spain, the government has a ten-year program of public works construction, which includes extensive port and harbor works. It has also issued a decree for the enlargement of the port of Vigo, on the Atlantic coast. War traffic between Great Britain and Turkey has necessitated improvement of Turkish ports, especially to expedite the unloading of such heavy material as locomotives and tanks. Contracts have been given to British firms for building piers and otherwise modernizing the harbors at both Alexandretta and Mersina.

E. E. RUSSELL TRATMAN.

PORTUGAL. A republic of southwestern Europe. Capital, Lisbon.

Area and Population. The area is 35,582 sq. mi. (continental, 34,386; Azores and Madeira, 1,196), and the population was estimated at 7,539,000 on Jan. 1, 1940 (6,825,883 at the 1930 census). Living births in 1939, 26.5 per 1,000; deaths, 15.5 per 1,000. Of 13,609 emigrants in 1938, 9,314 went to Brazil. The 1930 populations of the chief

cities were: Lisbon, 594,390 (1936 estimate, 650,000); Oporto, 232,280; Setúbal, 46,398; Funchal (in Madeira), 31,352; Coimbra, 27,333; Braga, 26,692; Evora, 22,061.

Colonial Empire. The overseas possessions of Portugal occupy an area of approximately 808,363 square miles. In 1938 the population was estimated to total 9,405,000. Colonies not listed in the accompanying table will be found in separate articles under their respective titles: Namely, ANGOLA, CAPE VERDE ISLANDS, MACAO, MOZAMBIQUE, PORTUGUESE GUINEA, TIMOR.

Colony (Capital)	Sq. mi.	Population
Portuguese India ^a (Nova-Goa)	1,538	601,000 ^b
São Thomé and Príncipe (São Thomé)	386	59,000 ^b

^a Includes Daman, Diu, and Goa. ^b 1936 census

Defense. Military service is compulsory for men from 20 to 48 years of age. As of Jan. 1, 1941, the standing army totaled 30,868 and the air force 868. There were 155,000 trained reserves but no equipment for them. The navy consisted of 7 sloops, 6 destroyers, 7 gunboats, 3 submarines, and a dozen auxiliary vessels. The naval personnel on Jan. 1, 1941, included 719 officers and 5,550 other ranks.

Education and Religion. Education is compulsory. The census of 1930 indicated that 67.8 per cent of the population were illiterate. Efforts to spread elementary instruction were thereafter intensified. In 1938 the public elementary schools numbered 7,937; teachers, 10,149; pupils, 458,463. In addition, individuals hired by the government gave elementary instruction in small villages to some 50,044 pupils. Secondary schools numbered 43 and had 958 teachers and 18,532 pupils. The three universities and their totals of students were those of Lisbon, 3,035; Coimbra, 1,631; Oporto, 1,213. The Roman Catholic faith prevails. The government maintains religious liberty for the individual but signed in 1940 a concordat with the Holy See assuring the preservation, to the Roman Catholic Church, of several specific rights.

Production. Agriculture is the leading occupation, followed by forestry, fishing, mining, and manufacturing. The 1933 constitution provided for Portugal's economic reorganization along corporative lines. In 1941 over 70 per cent of all exports were subject to state (corporative) control. Production of leading farm products in 1939 was (metric tons): Meat, 67,700; wheat, 516,100; barley, 39,200; rye, 98,800; oats, 91,100; corn, 364,700; potatoes, 606,000. Rice production (1939) was 3,510,000 bu.; olive oil, 22,000,000 gal.; wine, 203,943,000 gal.; fish catch, 180,400 metric tons, valued at \$7,180,000 (excluding certain kinds); sardines canned, 23,055 metric tons. Portugal is the world's leading producer and exporter of cork (291,886,000 lb. exported in 1939). Mineral output in 1940 was (in metric tons): Coal and lignite, 376,520; tin ore, 2,239; tungsten ore, 4,040; mixed tin and tungsten ore, 924; pyrites, 372,506; sulphur, 10,076. Chief manufactures: Cotton textiles, shoes, cement, lime, glass, fertilizers, paper, household wares, soap, chinaware, farm implements, cork wares, tiles, hardware, refined sugar, and olive oil. Also see *History* below.

Foreign Trade. Imports in 1940 were valued at 2,523,500,000 escudos (2,081,500,000 in 1939); exports, 1,612,600,000 escudos (1,339,300,000 in 1939). Chief imports in 1940 (in million escudos): Coal and coke, 208.0; chemicals and drugs, 177.2; mineral oils, 169.8; raw cotton, 165.3; yarn, cloth, etc., 151.4; vehicles and ships, 146.7; iron and

steel, 134.1; machinery and apparatus, 124.1. Leading exports (in million escudos): Cork and its products, 270.8; wine and other beverages, 248.8; fish products, 238.1, cotton manufactures, 82.3; olive oil, 78.4; wolfram and tungsten ores, 68.8. Trade is mainly with Great Britain, the United States, Germany, and the Portuguese colonies. See TRADE, FOREIGN

Finance. Budget estimates for 1941 anticipated total receipts of 2,783,700,000 escudos and expenditures of 2,783,200,000 escudos. Closed accounts for 1939 showed a surplus for the 12th consecutive year as against almost continual deficits during the republican period of 1910-26. The public debt was steadily reduced after 1928. On Jan. 1, 1940, it totaled 6,322,000,000 escudos (about \$133,000,000), of which 3,315,000,000 escudos was external. The escudo, which was closely linked to the pound sterling, exchanged at an average of \$0.0404 in 1939 and \$0.0371 in 1940.

Transportation. There are 2,150 miles of railway lines, which normally transport about 30,000,000 passengers and nearly 8,000,000 tons of freight annually. In 1941 services were sharply curtailed for lack of coal. Highways extend 8,700 miles. Eleven rivers are navigable for varying distances. As a result of the European War, Lisbon became one of Europe's most important shipping and air traffic centers. It was a base for air lines to most parts of Europe, England, and North and South America. The merchant marine on June 30, 1939, comprised 266 vessels of 269,118 tons. In 1938 a total of 10,178 ships of 30,567,561 tons entered Portuguese ports

Government. Under a constitution adopted Mar. 19, 1933, Portugal is governed as a corporative state. It has as its executive head a President, elected by the vote of the people to a term of seven years. The people also elect a National Assembly, serving for four years. The popular vote extends to both sexes but is restricted, unequally as to the two, by requirements of literacy or of the payment of direct taxes. A Corporative Chamber of 79 appointed members represents the interests of local "autarchies" and of certain social groups, administrative, economic, cultural, and moral. But one single political party is allowed to function. Entitled the National Union, it supports the government. The President appoints the Premier and he in turn names his Cabinet, which is not responsible to the National Assembly. President, Gen. Antonio Oscar de Fragoso Carmona, who was elected without opposition Nov. 29, 1926, and twice reelected, the second time for the term ending Apr. 15, 1942. The unofficial dictator was Dr. Antonio de Oliveira Salazar, Premier and Minister of War, Finance, and Foreign Affairs, heading a military-civilian Cabinet formed in 1926 and reconstituted in 1936 and 1940.

HISTORY

Portugal, its economic strength seriously impaired in February by a destructive hurricane, burdened with the continued ingress of refugees and with hindrances to commerce with its colonies, passed the year in dread that belligerents would seize either Portugal itself or parts of its colonial empire. The first step in such occupation actually occurred in December, when Australian and Dutch forces occupied Portuguese Timor, north of Australia.

Hurricane of February 15. Striking first the island of Madeira, February 15, a hurricane of exceptional violence passed on northeastward, ravaging

continental Portugal and continuing into Spain. According to such estimates as appeared, it took 400 lives, injured 2,000 persons, and did material damage to the amount of \$100,000,000. Some 700 fishing craft were lost and many others damaged, greatly cutting down the equipment of the fisheries that normally provide a very substantial part of the country's livelihood. The loss of olive trees was put at one-tenth or more of the entire number, a corresponding drop in the country's heavy production of olive oil was likely to reduce this important source of wealth until the growth of new trees. The loss in almond trees and fruit trees was similarly sharp. It seemed likely that the forests had lost heavily in cork oaks and pine trees, overthrown by wind, and that the output of cork and of naval stores would long show the effect. The monetary estimate of total damage was exceedingly great in proportion to the limited area and the modest economic wealth of Portugal. Yet the disaster received comparatively little attention and the concern, in Portugal and outside, whether the country could maintain its independence and territorial integrity

Fears of Invasion. From early spring until the time when the German forces became definitely committed to a long Russian campaign, the Portuguese had to apprehend German seizure of the country, on one hand, and on the other, an occupation of some of the Portuguese islands or other possessions by the opponents of Germany. The Government made successful efforts to convince both of the belligerent parties in Europe that an aggression would help nobody. Herein the Government had behind it the evident prospect that an aggression, wherever started, would result in the division of Portuguese territory between the Germans, who would acquire the continental European part, and the adversaries of Germany, who would take the colonies and islands.

The peaceable bombardment of the country by means of German propaganda through the radio gave uneasiness early in the year, other countries' experience suggested that troops might soon follow. In mid-April a party of 800 Portuguese soldiers sailed to reinforce the Azores; two more contingents went there before midsummer. Nevertheless the possibility of a German expedition against these islands gave rise to anxiety and discussion in England, as a possible way of interrupting ships' passage between Great Britain and the North American ports. In the United States, President Roosevelt adverted to the Azores in a speech transmitted by radio; in its course he represented the possible German capture of Portuguese islands in the Atlantic as a peril to the United States.

The Portuguese Government promptly presented, May 30, a note of protest to the U.S. Secretary of State, the text of which was not officially published. Secretary of State Hull replied, June 10, in a note saying, among other things, that his Government "harbors no aggressive intentions against the sovereignty or territorial integrity of any other country." But he added: "Our policy today is based upon the inalienable right of self-defense. The Government of the United States cannot but view with increasing anxiety the constantly expanding acts of aggression on the part of a certain belligerent power." The press questioned the President about this exchange of notes immediately after the delivery of the answer to Portugal. He disclaimed knowledge of either note.

Under these circumstances the Portuguese Government sought further light on the United States' utterances on the subject; and the journal *Diario*

da Manha of Lisbon declared that the Portuguese would defend the Azores and had "the will and right to defend themselves against any aggression no matter whence it comes." A month later the Portuguese Minister at Washington announced, July 13, that he had the desired assurances that the United States would not seek control of the Azores, Cape Verde, or other Portuguese islands. Also see BRAZIL under *History*.

Seizure of Timor. Portuguese Timor, Portugal's part of the island of that name, was occupied later in the year by troops under the authority of the Australian and the Dutch Governments. The remainder of the island being a possession of the Netherlands and the Japanese submarines reportedly operating in the region, while distance and scantiness of means prevented Portugal's adequately defending the coast of her territory, the Netherlands had the warrant of need for such action as might keep the Japanese from lodging on these coasts. The Australians, since the northern coast of Australia lay 300 miles south, had like reason of their own. The Portuguese authorities on the island apparently protested but did not offer armed resistance. The Government of the Netherlands, in an announcement from London, December 18, revealed the occupation and declared the continuance of Portuguese sovereignty.

Portugal summoned the National Assembly in special session immediately and asked the occupying Governments, December 19, to withdraw their troops immediately. Foreign Minister Salazar in presenting to the Assembly the circumstances in Timor revealed that the British Government had since December 4 sought an understanding that would bring them Portuguese permission to put troops in Portuguese Timor, which proposal had been refused.

Other Occurrences. Lisbon was troubled early in the year by bandits who occupied themselves impartially with subversive political terrorism and with private assassination and robbery. Fourteen of them were sentenced to long terms of prison, March 23. Portugal and Spain signed, May 21, economic accords that effected concessions for trade, free visas on either side for passports, equal rights for ships in Portuguese ports, and preference, as to surtaxes, for Portuguese colonies' goods in Spanish ports. On November 9 the Government created a commission to control production and exports and to limit prices for goods in domestic trade.

See GREAT BRITAIN, NETHERLANDS INDIES, and SPAIN, under *History*.

PORTUGUESE EAST AFRICA. See MOZAMBIQUE.

PORTUGUESE GUINEA. A colony of Portugal situated on the west coast of Africa between French Guinea and Senegal. Area, 13,944 square miles; population, 415,200, mostly natives of various tribes. Bolama, the capital, located on an island of the same name, became in 1941 an air base for Pan American Airways planes on their alternative southern route across the Atlantic. Bissao is the chief port. Imports in 1938, about \$1,171,847; exports, \$1,288,464. See PORTUGAL under *Colonial Empire*.

PORTUGUESE INDIA. See PORTUGAL under *Colonial Empire*.

PORTUGUESE WEST AFRICA. Same as ANGOLA (q.v.).

POST OFFICE. The Post Office Department is the largest civilian department of the United States Government, with 338,114 regular employees and

some 44,095 post offices and 6,553 branches and contract stations. During the fiscal year 1941, it transported and delivered approximately 29,236,000,000 pieces of mail, weighing about 3,125,000 tons. This was an increase over the previous fiscal year of 1,486,000,000 pieces and 185,000 tons. The audited revenues of the Post Office Department for the fiscal year 1941 amounted to \$812,827,735, the highest in the history of the postal establishment.

FRANK C. WALKER.

POSTWAR PLANNING. See CONSTRUCTION INDUSTRY; LEAGUE OF NATIONS.

POTASH. Production of potash in the United States in 1941 amounted to 480,000 tons (366,344 tons in 1940) and all fears that a possible shortage such as developed during the war years 1915-1918 were put to rest. Foreseeing an appreciable decrease in imports for 1941, potash was put under export-license control by government order, Jan. 10, 1941. A third mine opened in the Carlsbad, New Mexico, area was in full operation in 1941 and helped to swell the year's output. Production capacity for 1942 was expected to reach 600,000 tons, enough for all United States requirements with sufficient margin for exports to friendly countries.

Potassium sulphate, formerly available only from abroad, was produced in 1941 chiefly by two companies in California and New Mexico. A third put out sulphate of potash-magnesia. The basic price of 53½¢ a unit for muriate remained unchanged to June, 1941. But a 2½-4½¢ increase per unit for 50 per cent K₂O muriate from the New Mexico mines was reported for the 1941-42 period. A \$2 increase per ton to \$38.25 for sulphate was expected for the same period. A discovery value of 85¢ a ton was granted to the United States Potash Company by the U.S. Board of Tax Appeals on a workable deposit of 14,000,000 tons of potash.

Imports for 1941 included 20,000 tons of 50 to 60 per cent muriate from Spain, and 16,000 tons of potash nitrate from Chile.

POTATOES. The 1941 potato crop in the United States was estimated by the U.S. Department of Agriculture at 357,783,000 bu. harvested from 2,733,000 acres averaging 130.9 bu. compared with 378,103,000 bu. in 1940, 2,865,000 acres, and 132 bu.; and the 1930-39 average of 370,045,000 bu., 3,296,000 acres, and 112.6 bu. The 18 surplus late potato States produced 242,217,000 bu. and were led by Maine with 44,745,000 bu., New York 27,676,000, Idaho 27,450,000, and Pennsylvania 20,540,000 bu. The 12 other late potato States made 38,314,000 bu. with Ohio 10,614,000 bu. leading the group. These 30 late potato States made a total of 280,531,000 bu. The seven intermediate potato States led by New Jersey with 10,360,000 bu. totaled 29,935,000 bu. and the 12 early potato States led by California with 10,101,000 bu. and North Carolina with 6,636,000 bu. totaled 47,317,000 bu. The seasonal average price per bu. (preliminary) received by farmers in late potato States was 68.9¢, in intermediate States 68.6¢, in early potato States 75.0¢, or a National average of 69.5¢ and an estimated production value of \$248,715,000 (1941), compared to 53.8¢ and \$203,345,000 (1940). See ENTOMOLOGY, ECONOMIC.

POULTRY. Stimulated by improved market conditions and a very favorable feed situation, both as to quantity and price, poultry production in the United States reached unprecedented levels during

1941. The numbers of laying hens were somewhat below 1940 levels to midsummer but increased steadily thereafter, the 336,766,000 on farms at the end of December being 5 per cent higher than a year earlier. Egg production per hen averaged higher during every month of 1941 than for the previous year. Total egg production reached 40,322 millions, 4 per cent above that of 1940 and 10 per cent above the preceding 10 year average. An estimated 1,055 million chicks were produced by commercial hatcheries, 28 per cent more than in 1940, with November and December hatchings exceeding 1940 levels by much wider margins. The marketing of young chickens established a new record, with an approximate total of 3,012 millions lb. (live weight basis) being slaughtered during the year, about 14 per cent above that of 1940.

With retail prices of chickens advancing less than that of other meats, consumption during the closing months of 1941, also was estimated to be the highest on record. The number of turkeys produced in 1941 was estimated to be 33,553,000 or only 0.3 per cent greater than in 1940. The market receipts were actually below 1940 levels indicating that larger than normal numbers were retained on farms for breeding purposes.

Prices for eggs, chickens, and turkeys during 1941 were consistently above 1940 levels, prices received by farmers in December averaging 30, 15, and 25 per cent respectively higher than a year earlier. Food production goals for 1942 called for 11, 13.6, and 10 per cent increases above 1941 levels for eggs, chickens, and turkeys respectively. To protect farmers against an abnormal market decline, the government guaranteed prices for eggs and chickens of not less than 85 per cent of parity to Dec. 31, 1942.

With dried eggs greatly in demand for lend-lease shipment, capacity for drying eggs was more than trebled during the year. Over 40 million lb. of dried eggs were produced in 1941 or approximately four times the previous record output of 1939. Cold storage stocks at the end of the year included 551,000 cases (30 dozen each) of shell eggs, 95,561,000 lb. of frozen eggs, and 218,374,000 lb. of frozen poultry, 11 per cent below and 31 and 5 per cent above 1940 levels respectively. The Federal Government made direct purchases of 52,645,230 dozen fresh eggs, 66,190,000 lb. of frozen eggs, and 44,614,000 lb. of dried eggs during the year and in addition over 60 million dozen eggs were distributed to low income families under the Blue Food Stamp Plan.

Mainly because of lend-lease shipments, egg exports were far above normal in 1941, the total for the first 9 months of the year including about 23 million dozen shell eggs and 23¼ million lb. of dried or frozen eggs, as compared with 3½ million dozen and 127,489 lb. respectively for the corresponding period of 1940. Principal imports consisted of approximately 3 million dozen shell eggs, mainly from Argentina, and about 2 million lb. of dried yolks.

Fragmentary information from European countries indicated a general drastic reduction in egg production and forced liquidation of laying flocks in the face of steadily decreasing feed supplies. Denmark, an important exporting nation, produced only 47 per cent as many eggs during the first half of 1941 as in the corresponding period of 1940. Swedish production was reduced about 30 per cent below the 1940 level and strict rationing was adopted late in the year. Italy, facing a serious shortage, blocked all egg stocks in midsummer and placed distribution under the Ministry of Agricul-

ture. Great Britain has been extremely deficient in shell eggs since midsummer 1940, but greatly increased imports of dried and frozen eggs has tended to relieve the situation there. See AGRICULTURAL COOPERATION; VETERINARY MEDICINE.

E. C. ELTING.

POWER, DIVISION OF. The Division of Power of the Department of the Interior was created on Apr. 18, 1941, by order of Secretary Ickes. The order stated that the new Division would "have supervision over all functions in connection with electric power matters in the Department of the Interior, the study of power problems, and the coordination of power policies and activities within the Department and with other agencies dealing with power." Pursuant to the order, the Director of the Division reports directly to Secretary Ickes.

One of the first problems to confront the newly created Division involved the proposed lease agreement submitted by the City of San Francisco as an attempt to comply with the Raker Act. This agreement was analyzed, and conferences were held with representatives of the Federal Power Commission and the Department of Justice. Secretary Ickes determined that the plan did not comply with the Act and subsequently representatives of the Division negotiated with City officials concerning submission of a new plan and a further stay of the outstanding injunction.

The Division is directly concerned with the many problems, requiring departmental action, which arise in connection with the generation and distribution of power at the projects operated by the Bureau of Reclamation, of which one of the most important is the Boulder Canyon Project. Immediately upon its establishment the Division was required to work with the personal representative of the Secretary in drafting regulations and negotiating contracts under the Boulder Canyon Project Adjustment Act. This work extended over a period of nearly two months and culminated in the execution of the contracts and the promulgation of the regulations by Secretary Ickes.

The Reclamation Project Act of 1939 affirms the policy of Congress that preference in the sale of power shall be given to municipalities and other public corporations and to cooperatives, so as to distribute the benefits of the public power systems as widely as possible. The Division of Power is responsible for giving effect to this policy. Since its inception, the Division has reviewed and passed upon power sales contracts or other power matters relating to the following Reclamation projects, in addition to those already mentioned: Shoshone and Kendrick projects in Wyoming, North Platte Project in Nebraska, Minidoka and Boise projects in Idaho, Deschutes project in Oregon, Parker Dam project in Arizona, Strawberry project in Utah, and others located in each of the far western States. The Division has also been considering power problems which have arisen in Puerto Rico and the Virgin Islands.

One of the major activities of the Division has been assisting the Bonneville Power Administration in its negotiations with the Office of Production Management and Defense Plant Corporation in regard to the location of plants for the production of critical materials, contracts for the supply of power, and purchase of necessary electrical equipment. Coordination of the program for the installation of additional generating facilities at Grand Coulee Dam and the estimates of both the Bonneville Administration and the Bureau of Reclamation for funds to proceed with the construction program

during the current fiscal year are discussed and reviewed with those agencies. The Bonneville Power Administration is engaged in negotiations with several utility companies in its region, looking to the acquisition of their properties by local public power distributing bodies. The Division of Power has been following these negotiations closely and advising the Bonneville Power Administration on matters of policy and of financing the public utility districts.

The Division is directly concerned with the many of the possibility of providing additional sources of power for defense use on existing or proposed projects under the jurisdiction of the Department of the Interior. The staff of the Division has worked with other Divisions of the Department, as well as with the Federal Power Commission, the Office of Production Management, and the Corps of Engineers of the War Department upon this matter. In connection with these studies the Division also has undertaken to consider plans for mineral resource utilization and for industrial development which will assure a well balanced defense program as well as the continuance of a market for power after the defense emergency. Such work on defense power supply and future planning looks to the development of hydroelectric facilities that might be placed in closer geographic and economic relationship to domestic sources of critical raw materials

ABE FORTAS.

POWER PLANTS. See ELECTRIC LIGHT AND POWER.

PREFABRICATED HOUSES. See ARCHITECTURE.

PREFERENCE RATINGS. See BUSINESS REVIEW under *Restrictions Under the Defense Program.*

PRESBYTERIANS. A religious connection adhering to a system of church government by presbyters or elders and having some 60,000,000 members throughout the world. In the United States there are ten Presbyterian bodies, the largest of which follow. See also RELIGIOUS ORGANIZATIONS.

Presbyterian Church in the United States of America. This is the largest body of the Presbyterian communion, being represented by churches in every State of the Union and having official mission stations in Alaska, Cuba, Puerto Rico, and 16 foreign lands. In 1941 its churches in the United States and abroad were organized into 42 synods and 276 presbyteries. Statistics for the year ended Mar. 31, 1941, showed a total communicant membership in full standing of 2,013,247, with adherents numbering approximately 5,000,000. The Sunday school enrollment totaled 1,453,225. The number of churches was 8,733 and of ministers 9,538. Contributions during the year amounted to \$42,200,443, of which \$35,173,337 was for current expenses and \$7,027,106 for benevolences. The Board of National Missions received \$2,296,154; the Board of Foreign Missions, \$2,167,989; the Board of Christian Education, \$519,748; and the Board of Pensions, \$151,434, all from living givers. The Church maintains 53 colleges and 11 theological seminaries. It published three national official periodicals, *Monday Morning, Everyone,* and *Women and Missions.*

The 153rd annual General Assembly was held at St. Louis, Missouri, May 22-28, 1941. The Rev. Herbert Booth Smith, D.D., L.H.D., pastor of Immanuel Presbyterian Church, Los Angeles, California, was elected Moderator. In the matter of Church cooperation and union the Assembly directed its three Boards of Foreign Missions, National Missions, and Christian Education to appoint committees to confer with similar committees of the Presbyterian Church in the United States (Southern). Though the General Assembly expressed its

belief that the United States could do more for a lasting peace by "remaining free from military participation in the present conflict," yet it declared that "it is the duty of a Church which worships a God of justice to recognize a moral distinction between enslaving dictatorships which invade the lands of others, and those peoples which are valiantly defending their liberties and spiritual heritages." The Assembly approved the establishment of the Presbyterian United World Emergency Fund committee and established a Presbyterian Emergency Service Commission. The Church has its headquarters in the Witherspoon Building, Philadelphia, Pa., in charge of the Rev. William Barrow Pugh, D.D., LL.D., Stated Clerk.

Presbyterian Church in the United States (South). This division of the Presbyterian denomination covers the territory commonly known as the Southern States. It was composed in 1941 of 17 Synods (in most cases, corresponding to State lines) and 88 Presbyteries, with 3,497 organized churches, 2,475 ministers, and 538,176 members. During the year 16,190 were received on confession of faith, and 23,379 by certificate. There were 9,670 adult baptisms and 5,630 infant baptisms. The Ruling Elders numbered 17,795, and deacons, 20,484. Contributions for current expenses during the year amounted to \$3,576,295, for pastors' salaries \$3,133,485, for building expense \$2,110,369, and for benevolences \$3,490,130, a grand total of \$12,310,279. The total per capita gift was \$22.87, of which \$6.48 was for benevolences and \$16.39 for current expenses.

Foreign mission work has been carried on in six countries: Africa, Brazil, China, Japan, Korea (Chosen), and Mexico, among 36,000,000 people. Three hundred and seventy-seven American missionaries have constituted the foreign working force. The war, of course, disrupted the work in the Orient. Most of the missionaries to China, Japan, and Korea had been evacuated to the homeland some months prior to the entry of America in the war with Japan. However, Japan's sudden attack on the Hawaiian and Philippine Islands found about fifty in the three countries and there is much uncertainty as to the treatment which is being accorded those who are in territory controlled by Japan.

In the homeland the church maintains four theological seminaries, one training school for lay workers (white), two training schools for colored people, thirteen colleges, eight junior colleges, two preparatory schools, three mission schools, four mountain schools, two Mexican mission schools, and sixteen orphans' homes and schools. The official organ of the church is the *Presbyterian Survey*, published monthly by the Presbyterian Committee of Publication, Richmond, Va. Privately owned weekly papers of the denomination are *The Christian Observer*, Louisville, Ky., and *The Presbyterian of the South*, Richmond, Va.

The Eighty-first General Assembly of the church convened in Montreat, N.C., May 22, 1941, with 345 commissioners present. Rev. Chas. E. Diehl, D.D., LL.D., President of Southwestern (The College of the Mississippi Valley), Memphis, Tenn., was elected Moderator. The Ministers' Annuity (Pension) Fund was put into operation on Apr. 1, 1940, and during the year which ended on Mar. 31, 1941, the Presbyteries retired 92 ministers who were entitled to retire because they had reached or exceeded the age of sixty-five years. Each of these was granted a pension based on the number of years of service to the Church. The 1942 meeting of the General Assembly will convene in the First Presbyterian Church, Knoxville, Tenn., on May

28. Rev. E. C. Scott, D.D., is Stated Clerk and Treasurer, with office at 1120 Liberty Bank Building, Dallas, Tex.

United Presbyterian Church of North America. A member of the family of Presbyterian Churches, of Secession and Covenant origin, formed by the Union in Pittsburgh, Pa., May 26, 1858, of the Associate and Associate Reformed Churches. The General Assembly of the Church convened in Indianapolis, Ind., May 21, 1941. The membership of the church is 188,131 in America and 67,767 in Egypt and India. The contributions in America averaged \$22.98 for the year. The Moderator of the General Assembly is Rev. R. L. Lanning, D.D., of Pittsburgh, Pa. The Rev. O. H. Milligan, D.D., of Avalon, Pittsburgh, Pa., is the Principal Clerk. The Executive Secretary of the Board of Administration is the Rev. T. C. Strangeway, D.D., Pittsburgh, Pa.

Cumberland Presbyterian Church. One of the Presbyterian bodies whose chief strength is in the Southern States. The 1941 statistical report shows: churches, 1,105 reporting, ministers, 808, total membership, 73,759, a net gain of 402 members over the previous year, with 165 churches making no report.

A general assembly which meets annually is the supreme judiciary, the 1942 meeting to be held in McKenzie, Tenn., June 18-23, 1942. Rev. L. L. Thomas, D.D., McKenzie, Tenn., was Moderator of the general assembly in 1941 and the Rev. D. W. Fooks, of Nashville, Tenn., was stated clerk, treasurer, and general secretary.

PRICE ADMINISTRATION, Office of (OPA). The Office of Price Administration, formerly known as the Office of Price Administration and Civilian Supply, was created Apr. 11, 1941, by executive order of the President. Into this one agency were combined activities formerly performed by the Commissioners in charge of price stabilization and consumer protection in the advisory commission to the Council of National Defense, the initial organization set up to direct the nation's armament program. The executive order charged the agency with taking "all lawful steps necessary or appropriate in order to prevent price spiraling, rising costs of living, profiteering, and inflation resulting from market conditions caused by the diversion of large segments of the nation's resources to the defense program, by interruption to normal sources of supply, or by other influences growing out of the emergency." Additional responsibility of OPA, through the consumer division, is to see that the standard of living is maintained at the highest level consistent with the military defense requirements.

Organization of the Office of Price Administration is set up as follows: Administrator, appointed by the President, Deputy Administrator, under the Administrator; Director of the Price Division; Director in charge of the Consumer Division; General Counsel. These three are under direction of the Deputy Administrator.

In the Price Division are fourteen commodity sections, each headed by a Price Executive in charge of price work for all commodities in his section, a research division, and a division of accounting, analysis and review. Commodity sections include: consumers durable goods; industrial and agricultural machinery; copper and brass; chemicals, drugs, and paints; rubber and rubber products; paper and paper products; textiles; leather goods and apparel; automobiles and trucks; food and food products; fuels; lumber and building materials; zinc, lead, and tin; and steel, iron, and steel

products. Another section handles rent problems.

In the Consumer Division there are three sections. They deal with consumer relations, consumer standards and needs, and consumer publications.

There are four general classifications into which fall price actions taken by the Office of Price Administration: (1) Warnings concerning price increases which are deemed unjustified. (2) Informal agreements with individual concerns on prices they charge for their products. (3) Letters to individual members of industries, asking them not to charge prices higher than those prevailing on specific dates. (4) Establishment of formal price schedules, setting maximums which may be charged for commodities specified in the schedules. A general practice of OPA has been to hold conferences with representatives of companies whose prices are under consideration. In many cases industry panels have been set up, composed of representatives of various concerns in the industry, to meet OPA officials and to offer advice in working out price schedules or other actions.

A total of 63 price schedules have been issued as of December 31. The schedules (including five marked with an asterisk which were revoked), and the commodities they cover, follow:

(1) Second-Hand Machine Tools; (2) Aluminum Scrap & Secondary Ingot; (3) Zinc Scrap Materials and Secondary Slab Zinc; (4) Iron and Steel Scrap; (5) Bituminous Coal *; (6) Iron and Steel Products; (7) Combed Cotton Yarns; (8) Nickel Scrap and Secondary Materials; (9) Hides, Kips, and Calfskins; (10) Pig Iron; (11) Cotton Grey Goods; (12) Brass Mill Scrap; (13) Douglas Fir Peeler Logs & Douglas Fir Plywood; (14) Raw Silk and Silk Waste *; (15) Copper; (16) Sugar; (17) Pig Tin; (18) Burlap; (19) Southern Pine Lumber; (20) Copper Scrap; (21) Formaldehyde; (22) Pennsylvania Grade Crude Oil; (23) Cotton Grey Goods; (24) Washed Cattle Tail Hair & Winter Hog Hair; (25) Fats and Oils and Their Products *; (26) Douglas Fir Lumber; (27) Anthracite *; (28) Ethyl Alcohol; (29) Coke; (30) Waste-paper Sold East of the Rocky Mountains; (31) Acetic Acid; (32) Paperboard Sold East of the Rocky Mountains; (33) Carded Cotton Yarn; (34) Wood Alcohol—Methanol; (35) Carded Grey & Colored Yarn Cotton Goods; (36) Acetone; (37) Normal Butyl Alcohol; (38) Glycerine; (39) Upholstery Furniture Fabrics; (40) Builders' Hardware & Insect Screen Cloth; (41) Steel Castings; (42) Paraffin Wax; (43) Used Steel Barrels or Drums; (44) Douglas Fir Doors; (45) Asphalt or Tarred Roofing Products; (46) Relaying Rail; (47) Old Rags; (48) Flashlights, Flashlight Batteries, and Flashlight Bulbs *; (49) Resale of Iron or Steel Products; (50) Green Coffee; (51) Cocoa Beans and Cocoa Butter; (52) Pepper; (53) Fats and Oils; (54) Douglas Fir Peeler Logs; (55) Second-Hand Bags; (56) Reclaimed Rubber; (57) Wool Floor Coverings; (58) Wool and Wool Tops and Yarns; (59) Kapok; (60) Direct Consumption Sugars; (61) Leather; (62) Cigarettes; (63) Retail prices for new rubber tires and tubes.

Briefly, this is how a price schedule is prepared: (1) A factual background regarding price problems is built up by research workers, cooperating with technical consultants, business advisors, and other Government agencies. (2) Representative industry members are invited to the Washington offices of OPA for discussion of the price problem under consideration. (3) The plan of action deemed most appropriate is formulated, these ob-

jectives being taken into account: prevention of inflationary price movements, encouragement of an adequate supply of vital materials, maximum use of existing trade practices and an effort to avert disturbances to the existing business structure and practices of an industry. When this preparatory work is completed, an economic brief is prepared, outlining economic details of the problem and giving reasons for recommending a definite line of action. A legal brief also is prepared, outlining legal problems involved in any proposed price schedule. These briefs, economic and legal, together with recommendations of staff members, are reviewed by department heads before they are placed before the Administrator for his approval and formal signature. See BUSINESS REVIEW; LIVESTOCK; MARKETING.

(The Emergency Price Control Act of 1942 became law on Jan. 30, 1942, and Leon Henderson was inducted as Price Administrator on February 11. All of the former "price schedules," including some 39 additional that were issued between Dec. 31, 1941, and Feb. 11, 1942, acquired the status of "regulations" within the meaning of the Act. On March 4 the OPA underwent an internal reorganization. The former single price division was replaced by five separate operating divisions—Food and Apparel; Industrial Materials and Equipment; General Products; Fuel; and Rent. An assistant administrator was placed in charge of each division. By Directive No. 1 of the War Production Board, issued Jan. 24, 1942, the OPA was given authority to ration commodities and goods at the retail level. Rationing of tires was begun at once, followed by rationing of new passenger automobiles. Sugar rationing was scheduled to begin early in the spring. A separate Rationing Division was being organized as of the close of February.)

LEON HENDERSON.

PRICES. See AGRICULTURE; AGRICULTURE, U.S. DEPARTMENT OF; BUSINESS REVIEW under *Commodity Prices*; LIVING COSTS AND STANDARDS; articles on products. For **PRICE CONTROL AND REGULATION**, see ARKANSAS under *Legislation*; BITUMINOUS COAL DIVISION; BUSINESS REVIEW under *Commodity Prices*, also under *Restrictions and Minerals*; CANADA and the various other belligerent countries under *History*; MARKETING; PRICE ADMINISTRATION, OFFICE OF. For list of **PRICE SCHEDULES**, see PRICE ADMINISTRATION, OFFICE OF.

PRIMATES. See ANTHROPOLOGY.

PRINCE EDWARD ISLAND. A maritime province in eastern Canada. Area, 2,184 square miles. Population (1941 census), 93,919. Vital statistics (1940): 2,047 living births, 1,057 deaths, 702 marriages. Chief towns (1941 census): Charlottetown, capital (14,460), Summerside (4,978). Education (1938-39): 19,798 students enrolled in schools and colleges.

Production. The gross value of agricultural production in 1940 was \$13,387,000 (field crops \$8,290,000, dairy products \$1,765,000, farm animals \$1,617,000, poultry products \$951,000, fur farming \$544,000). Oats 3,726,000 bu. (4,998,000 in 1940), mixed grains 1,315,000 bu. (1,505,000), potatoes 142,000 tons (228,950), roots 91,000 tons (127,450), hay 368,000 tons (344,000), were the main field crops in 1941. Livestock (1940): 93,800 cattle (including 44,400 milk cows), 53,200 hogs, 43,900 sheep, 28,650 horses, 851,400 poultry. Fur output (1938-39): 74,748

pelts worth \$1,299,331. Fisheries catch (1940): 12,280 tons valued (as marketed) at \$714,900. Forest production (1939) was valued at \$551,000. Manufacturing (1939): 222 factories, 1,088 employees, \$1,243,979 net value of products.

Government. Finance (1940): \$2,030,366 for revenue and \$2,152,101 for expenditure; net funded debt, \$6,814,904. The executive authority is vested in a lieutenant governor who is advised by a ministry of the legislature. In the legislative assembly there are 30 members elected (15 by real property holders and 15 by universal male and female suffrage) for a five-year term. Four senators (appointed for life) and 4 elected commoners represent the province in the Federal Parliament at Ottawa. Lieutenant Governor, Bradford W. LePage (appointed Oct. 1, 1939); Premier, Thane A. Campbell (Liberal). See CANADA.

PRINCIPE. See PORTUGAL under *Colonial Empire*
PRINTS. See ART.

PRIORITIES, PRIORITY RATINGS. See BUSINESS REVIEW under *Restrictions and Minerals*, MARKETING; PRODUCTION MANAGEMENT, OFFICE OF; SUPPLY PRIORITIES AND ALLOCATIONS BOARD; UNITED STATES under *Defense*, also articles on branches of industry, as BUILDING, DEFENSE TRANSPORTATION, NEWSPAPERS; CANADA under *History* FOR **PRIORITIES DIVISION**, see PRODUCTION MANAGEMENT, OFFICE OF.

PRISONS, PAROLE, AND CRIME CONTROL. Three things stand out as one reviews the prison field during the past year: the effect of defense activities on prisoners and prison programs, the growth of probation and parole, and the reaction of the public against brutality in prison discipline. Perhaps the most important accomplishment of the year was the modification of the century-old statute forbidding the induction of any felon into the military service of the United States. The most significant proposal made was that offered by the American Law Institute in its model Youth Correction Authority Act. Most prominent in newspaper headlines were the prison activities of the States of California and Georgia. The population of Federal and State prisons showed a steadily downward trend during the past year due, no doubt, to improved economic conditions and the induction of large numbers of young men into the armed services.

Prisons and National Defense. Even before Dec. 7, 1941, prisoners everywhere in America were pleading for an opportunity to join in the defense program. Petitions to be allowed to help in some way in the world-wide struggle poured in from both Federal and State prisons, from individual prisoners, and from groups of inmates who want to do their part.

As the defense program gathered headway, Federal prisons especially felt the effect of increased orders and demand for production. In several Federal prisons, industries ran on several shifts daily to fill defense orders for canvas goods, textiles, and metal products. Production was doubled in some instances. Chairman of the Committee on Prisons and National Defense, Mr. Sam Lewisohn, proposed the organization of "Division M" with training courses in essential services in every prison so that on release prisoners may at once begin to aid in the defense program. In anticipation of such a demand, an Airplane Mechanics School was established at the Federal Reformatory at Chillicothe, Ohio.

Military Service for Ex-prisoners. One of the most significant results of the defense program as it relates to prisoners was the passage of a law approved

July 29, 1941, giving the Secretary of War power in "special meritorious cases" to waive the ban on the induction of ex-prisoners into military service. Concomitant with this recognition of the principle of individual treatment, the War Department, working in collaboration with the Selective Service System and the Federal Bureau of Prisons, issued regulations whereby all but certain classes of ex-prisoners are made eligible for military service, other things being equal. These regulations exclude those convicted of the heinous crimes of treason, murder, rape, kidnapping, arson, sodomy, or pandering; or of any crime involving sex perversion; or for any illegal dealing in narcotics or other habit-forming drugs; or those convicted more than once of any offense which may be punished by death or confinement for a term exceeding one year in a penitentiary or prison; or those on probation or parole unless released from supervision during the period of military service; or those previously discharged from the Army by other than an honorable discharge. This statute and these regulations for the first time officially modified the century-old provision barring all felons from military service, and are a most important recognition of the principle of democratic rehabilitation (as opposed to totalitarian extermination) of anti-social groups. As a result, a growing number of ex-prisoners took their places in various branches of military service, and the effect of such action was reflected in the heightened morale of those still in institutions.

Growth of Probation and Parole. The year 1941 marked the centennial of the beginning of probation as a means of treating criminals. An appropriate celebration was held in Boston in commemoration of that event since it was John Augustus, the Boston shoemaker, who first persuaded the courts to let him try to readjust a convicted criminal under supervision in the community. The results of that experiment have grown until at present both the Federal and 30 State governments now employ probation in dealing with youthful or first offenders or those whose crimes arise chiefly out of some unforeseeable circumstances which are adjustable in the community. As compared with approximately 20,000 offenders annually sentenced to confinement in prisons and reformatories in these 30 States over 17,000 offenders are placed on probation or given a suspended sentence. (Attorney General's Survey of Release Procedures, Volume II, "Probation," p. 36.) On June 30, 1941, there were 29,303 Federal offenders on probation as compared with 23,666 Federal offenders under confinement in institutions. There is no question but that readjustment of criminals under proper supervision in the community is proving to be the most satisfactory method of treating offenders.

Such community supervision is essential even if the offender is required to spend part of his sentence under observation or confinement in an institution. The steady growth of parole in spite of its critics fully attests this conclusion.

Action in at least eight States was taken during 1941 to strengthen and extend the operation of parole. The United Prison Association of Massachusetts began the year with a resolution asking the Governor to complete carrying out the recommendations of the Parole Commission, which in 1940 reported the results of an extensive investigation into pardon and parole practice in that State. The investigation had shown that beginning with Governor Ely in 1931 the malodorous practice of permitting political favorites to collect fees amounting to as much as \$10,000 for securing pardons for notorious criminals had prevailed for nearly ten

years in Massachusetts and that at least one member of the Governor's Council, since removed from office by the legislature, had made a regular business of dealing in pardons and paroles. As a result, sweeping changes in Massachusetts parole law went into effect in 1941 including a ban on all parole petitions from the prisoner or anyone acting in his behalf. The entire membership of the parole board was changed, and improvement in the operation of the parole system of Massachusetts was anticipated as a result of this action.

During the year Pennsylvania also passed legislation providing for a "streamlined" parole administration by a five-man board under the general supervision of the Superior Court and with 280 aides to be appointed under Civil Service regulations. Parole for all prisoners with sentences of two years or over (except life and death sentences which will remain with the Board of Pardons) will be handled by this board. Parole for prisoners having less than two years will continue to be handled by county court judges.

Alabama, Florida, and South Carolina all moved to abolish the pardon and parole racket by putting these matters in the hands of nonpartisan boards. In Florida the three-man board which also has supervision of probation, was chosen by competitive examination. Louisiana undertook a survey of its existing parole procedure preliminary to making needed reforms, and the grand juries of at least 50 counties in Georgia memorialized the legislature to end the pardon racket which has centered in the governor's office.

Maryland has announced a plan to improve its parole procedure by providing a parole officer and a welfare and employment officer at each of its three major institutions whose duties shall consist in collecting and presenting pertinent data about prisoners to the parole commissioner and in helping prisoners to find suitable homes and employment on release. Such officers are to be selected under the merit system.

In Virginia, one of the only two States not having some kind of parole program in 1941, a legislative committee has presented a report recommending the establishment of a state-wide probation and parole system, and the Legislative Advisory Council of that State has recommended that \$138,000 be included in the budget for the biennium 1942-1944 to set up such a program.

Prison Discipline. Considerable interest in the methods used in various prisons to enforce discipline was evinced during 1941 in a number of States. In Louisiana following a series of newspaper articles showing that as many as 10,000 floggings of prisoners had occurred in the past 13 years in Louisiana prisons, the Governor abolished the use of the lash as a method of punishment. In Texas, both the Board of Prison Managers and the legislature took action abolishing "the bat" in that State. In Alabama a warden who admitted flogging women as well as men prisoners was fired. To a single courageous and public-spirited State legislator, Floyd Barham, goes the credit for exposing the brutal beatings of convicts, the insufficient food and clothing, and the bribery of prison officials in renting of prison farms in Arkansas.

In Illinois and in Colorado, exposure of the use of the lash as a means of corporal punishment for juveniles resulted in the removal of the superintendents of two schools for delinquent boys, and in Colorado this included the request for the resignation of 39 out of 46 employees of the school. In West Virginia, the papers reported that the Industrial School for Boys at Pruntyville was "an institu-

tion at the mention of whose name informed citizens hung their heads in shame."

In California, investigations disclosed the brutal beatings of two juveniles committed to the Whittier State School for Boys and resulted in the discharge of several employees including the superintendent of the school and a complete overhauling of the policies governing the school and its administration. A new superintendent was chosen after several months of inquiry, but unfortunately he, too, resigned after only five months in office. The widespread attention which juvenile institutions have received during the past year or so can undoubtedly be traced to the work of The Osborne Association and its very excellent reports setting forth the facts regarding these institutions in many States.

Youth Correction Authority. The most constructive proposal made during the year was that proposed by the American Law Institute in its plan to create a Youth Correction Authority to handle all offenders between juvenile court age and 25 years of age. Under this program, youthful offenders convicted of an offense would be committed to the custody of a board or authority which would determine after a careful study and diagnosis of the case the best type of treatment to fit the individual case. Such treatment might or might not include institutionalization; it might involve assignment to training in a non-penal type of institution or to a job in industry where skill could be acquired in the course of work. It would include careful supervision and guidance. During 1941, at least one State, California, adopted such a law and began to experiment with this new method of dealing with youthful criminals. The Federal Juvenile Delinquency Act applies the same general principles to offenders 17 years of age or under has demonstrated the practical possibilities of such a procedure.

Growth of Case Work in Prisons. The basis for such progressive legislation is, of course, an adequate case history and diagnosis of each prisoner sometimes known as classification. The beginnings of this technique in about half of the major prisons and reformatories of the country were noted in the report on prisons of the Attorney General's Survey of Release Procedures published in 1940. During 1941 the extension of this system of study and diagnosis in the prisons of Alabama, Maryland, and Tennessee should be noted.

New Institutions. Several new prisons were opened or put into operation during the year. A new maximum security prison at Green Haven, N.Y., was about completed. At Chino, Calif., a new institution for reformable cases from San Quentin and Folsom was opened. Utah was undertaking the construction of a new State prison to replace its antiquated penitentiary at Salt Lake City.

A new industrial school built at White Hill, Penn., at a cost of \$4,500,000 for 1,400 youths 15 to 25 years of age was opened in March, 1941. Boys confined there were regarded as "cadets" and not prisoners and an educational system was proposed which it was intended should link this school with the State educational system from grades to high school. By year's end, however, a special investigating committee appointed by the Governor to investigate the shooting of several youths and the killing of one attempting to escape from the school, reported that without classrooms, classes, library, or even recreation fields, White Hill was "just another prison."

Prison Personalities. The retirement of Lewis Lawes as warden at Sing Sing in 1941 marked the completion of one of the most colorful careers in prison administration in America in modern times.

Beginning as a guard in a State institution in 1905, Mr. Lawes became warden of the famous "Big House" in 1920 and for over twenty years has been an outstanding personality among American prison officials. He has undoubtedly done a great deal to inform the public regarding the human side of crime and criminals and to interpret the offender to the public.

Warden Jesse Dunn of the State Penitentiary at McAlester, Okla., was killed during a prison break in which he was taken through the gate of his prison as a hostage by an inmate intent on escape. Warden Thomas Gore of Nashville, Tenn., narrowly missed a similar fate when two of his prisoners captured and bound him in the prison yard and forced him to walk them to the front gate. There the coolness and courage of Record Clerk Glidewell who drew a pistol and shot both prisoners dead, saved the day.

The Federal Government granted an ex-prisoner named Ray McMillan, an allowance of \$3,500 to compensate him for false arrest and imprisonment for a crime the commission of which was confessed by another man.

René Belbenoit, famous as the man who escaped from Devil's Island, the French penal colony in French Guiana, was forced to flee to Latin America for fear of deportation. A number of his former companions at the French penal colony taking advantage of the fall of France in 1940 escaped in small boats and finally landed in the United States where during the first few months of 1941 a group of citizens sought vainly to find some happy solution for their problems. Finally, no other satisfactory solution having been worked out, it was necessary to turn them all back to the French authorities at Martinique with the understanding, however, that they would not be returned to the penal colony in Guiana.

Prison Population and Crime Trends. The total population of the State and Federal prisons and reformatories in the United States, which had been about 180,000 on Jan. 1, 1940 and 1941, is estimated to have decreased to a slightly lower level on Jan. 1, 1942. The approximate total number of Federal prisoners in custody decreased from about 25,456 on Jan. 1, 1940, to 23,933 on Jan. 1, 1941. There was a further decrease to 23,116 on Jan. 1, 1942. The number of Federal probationers under supervision, which had increased from 28,563 on Jan. 1, 1940, to 29,472 on Jan. 1, 1941, showed a slight decrease to 29,283 (estimated) on Jan. 1, 1942.

The latest official crime statistics of the Department of Justice showing the number of offenses known to the police in 345 cities with populations over 25,000 for the first nine months of 1940 and 1941 indicate a decrease for robbery, burglary, and larceny, and increases for murder, manslaughter by negligence, rape, assault, and auto theft.

OFFENSES KNOWN TO THE POLICE IN CITIES WITH POPULATION OVER 25,000 JAN.-SEPT., 1940 and 1941 (*)

Offense	1940	1941	Increase or decrease (-)
Murder and non-negligent manslaughter	2,094	2,259	165
Manslaughter by negligence	1,073	1,234	161
Rape	3,478	3,729	251
Robbery	21,526	19,876	-1,650
Aggravated assault	18,833	19,871	1,038
Burglary—breaking or entering	113,176	106,225	-6,951
Larceny—theft	302,300	299,221	-3,079
Auto theft	68,418	72,901	4,483

(*) The above figures cover 345 cities with a combined population of 49,010,650

The accompanying table summarizes the situation.

See FEDERAL BUREAU OF INVESTIGATION; IDAHO under *Legislation*; JUVENILE DELINQUENCY; LAW. For widely publicized criminal cases, see CHRONOLOGY.

JAMES V. BENNETT.

PROBATION. See PRISONS.

PRODUCTION DIVISION. See PRODUCTION MANAGEMENT, OFFICE OF.

PRODUCTION MANAGEMENT, Office of (OPM). When the impact of defense needs upon the normal operations of American industry became apparent toward the end of 1940, a government operating agency was needed to coordinate defense production and to assure an adequate flow of materials to defense industries. The Office of Production Management was therefore established by Executive Order of the President on Jan. 7, 1941.

The new agency was charged not only with responsibility for accelerating production of tanks, guns, ships, airplanes, and other material for the Army and Navy, but also with the task of stimulating an increase of productive facilities wherever needed. For the attainment of these objectives, OPM was given broad power to put defense orders ahead of ordinary civilian supply through a system of priorities.

As a matter of organization, OPM was placed within the Office for Emergency Management in the Executive Office of the President. (See NATIONAL DEFENSE AND WAR AGENCIES.) At the same time, OEM took over the functions of the Advisory Commission to the Council of National Defense, and most of them were delegated to OPM. Administration of OPM was vested in a council of four, consisting of the Director General, Associate Director General, Secretary of War, and Secretary of the Navy.

In the beginning, OPM operated through three divisions: Production, Priorities, Purchases. In the course of the year, divisions of Labor, Materials, Civilian Supply, and Contract Distribution were added.

Under the OPM divisions of Production, Purchases, Materials, and Civilian Supply, 32 industrial branches were set up, each headed and staffed by experts familiar with the problems and practices of defense industries. Priorities specialists were attached to each of the industrial branches and given responsibility for carrying out the policies of the Supply Priorities and Allocations Board (q. v.) through their action on specific applications for priority assistance.

Each division of OPM was given specific responsibility for part of the general program for increasing war production and supplying material aid to other countries fighting the Axis Powers.

The *Production Division* was directly charged with increasing the rate of production of war materials, and especially with steps to encourage the expansion of productive facilities wherever necessary. In cooperation with the War and Navy Departments, private manufacturers and Federal financing agencies, the Production Division of OPM has taken an active part in the building of new factories for the manufacture of airplanes, new plants for finishing alloy steel, new shipbuilding facilities and ordnance factories, and in increasing the supply of raw materials for defense industries use.

By review of all major proposals for the purchase of war materials and construction projects,

the *Purchases Division* has prevented competitive bidding between the armed services, the Lend-Lease Administration and foreign governments. This division has also helped to secure an orderly scheduling of purchases by all agencies associated in the war program.

All American producers are required by law to accept war and essential civilian orders. The *Priorities Division* was set up to avoid jams in production schedules by indicating which orders are to be filled when there is a conflict. This division allocates the total available supply of certain scarce materials and types of equipment, such as metals and machine tools, and has made preparations to extend further the system of allocations.

The *Labor Division* of OPM was given the job of assuring the availability of men having the proper skills and training wherever needed by defense industries. In cooperation with NYA, WPA, and CCC, the Labor Division set up training programs for workers both in and outside of industry. It also has branches dealing with labor relations, defense housing, dislocation of labor resulting from scarcity of materials, labor standards in shipbuilding and other industries, and with the training and employment of Negroes and minority groups. (See SOCIAL SECURITY BOARD.)

The *Civilian Supply Division* was organized to determine the relative need for scarce materials among competing civilian demands, and was given jurisdiction over the industrial branches which deal primarily with production of civilian goods.

The *Materials Division* was made responsible for integration of the program for the supply of raw and semifinished materials needed for defense production. It also cooperates with the Priorities Division in determining the allocation of scarce materials.

The *Contract Distribution Division* has established field offices, conducted traveling exhibits, and worked with Army and Navy procurement officers to spread defense production throughout industry by encouraging subcontracting and the conversion of plants to defense use.

In addition to its seven major divisions, the Office of Production Management contains the President's Committee on Fair Employment Practice, a Bureau of Industrial Conservation, a Bureau of Research and Statistics, a Bureau of Clearance of Defense Industry Advisory Committees, and maintains a legal staff.

Operating on a front broad enough to cover the whole range of American industry, OPM was charged with responsibility for obtaining maximum production of defense materials while cushioning the shock to the normal economy as much as possible. Some of the specific achievements were as follows:

More than 6,000,000 workers were registered for defense jobs and defense training; more than 2,000,000 received industrial defense training outside of industry and in-training programs were set up in more than 1,800 plants handling war orders.

Close to half of \$9,200,000,000 earmarked for defense construction was represented by buildings in place at the end of the year. When the United States entered the war, about 1,500 defense construction projects had been completed and another 3,000 were under way.

American steel plants set a new production record of 83,000,000 tons in 1941, and the steel industry had undertaken an expansion program to add 10,000,000 tons to the annual capacity. Plans were completed for doubling the aluminum pro-

duction capacity, and both production and imports of other metals were greatly increased. Stockpiles of rubber, tin, cork, and hemp were accumulated.

Production of machine tools was close to 200,000 units in 1941, about double the volume produced in 1940 and eight times the normal production of 25,000 units a year.

Exact production figures for munitions became a strict military secret with the outbreak of war. However, in the first eleven months of 1941, the Navy commissioned 27 major combat ships, including two battleships, launched 41, and laid the keels for 128 more. Aircraft production had reached over 2,000 planes a month. Deliveries of merchant ships had reached two a week, and the shipyard capacity for merchant ships had been expanded to such an extent that deliveries of a ship a day were anticipated in the very early future. Production of tanks, guns, and ammunition had been greatly increased, and capacity to produce them was being expanded even more rapidly. Mass production of the materials and implements of war was getting into full swing at the end of the year.

Toward the end of the year, on December 18, the internal organization of OPM was rearranged in preparation for dealing with the vastly increased problems of production involved in a war program. The industrial branches which had previously reported to the division of Civilian Supply and the Purchases division were made directly responsible to the Director General and Associate Director General through a Special Assistant in Charge of Industrial Branches. With this change, the machinery of OPM was set up and functioning smoothly to handle the heavy load of the 1942 war program.

(The OPM was still functioning at the end of 1941, but was abolished Jan. 21, 1942 For a brief account of the new organization set up at that time, see WAR PRODUCTION BOARD.)

See BUSINESS REVIEW under *Restrictions Under the Defense Program* and under *Automobiles*, CHROMIUM; LABOR CONDITIONS under *Collective Bargaining*; LEATHER; MOTOR VEHICLES; SUPPLY PRIORITIES AND ALLOCATIONS BOARD; TIN.

PRODUCTION REQUIREMENT PLAN. See BUSINESS REVIEW under *Restrictions Under the Defense Program*.

PROPAGANDA. See COMMUNISM; FASCISM; GERMAN LITERATURE; PHILANTHROPY; GERMANY, GREAT BRITAIN, and UNION OF SOVIET SOCIALIST REPUBLICS under *History*.

PROTESTANT EPISCOPAL CHURCH. The end of the first year of the Presiding Bishop's advance program—Forward in Service—found virtually every diocese in the Episcopal Church participating in the movement. Following a period of preparation, culminating in a Church-wide Roll Call at Whitsuntide, Forward in Service announced a two-fold plan for the year beginning in the Fall of 1941:

1. To make the dominant theme for the coming year Worship and Prayer, with the aim to enlist all baptized members in regular and devout worship and prayer, so that they may acquire the incentive and receive the power to go forward in service.
2. To perfect the organization in every parish so that it may be better able to play an active part in the ten-year program.

The increasing tension in the world during 1941, culminating in the actual involvement of the United States in the war could not but have its effects on the world-wide work of the Church. Aid-to-British-Missions, undertaken under the authority of Gen-

eral Convention, received a hearty response resulting in a speedy oversubscription of the \$300,000 sought and substantial help to eleven English missionary societies for their work in every corner of the globe. Among the well-known societies aided were Society for the Propagation of the Gospel, Church Missionary Society, Universities Mission to Central Africa, Jerusalem and Near East Mission, South American Missionary Society.

During the year the rapidly enlarged defense forces of the nation placed a large responsibility on the Church to maintain its ministry among the men in uniform. Upwards of 200 ministers of the Church were serving as chaplains with the armed forces and the Army and Navy Commission was inaugurating a campaign to raise \$385,000 to uphold this work. The campaign is scheduled for early 1942. In addition one of the Commission's most important services is aid to parishes near Army camps and Naval training stations where the facilities are inadequate to cope with increased responsibilities. Closely akin to these responsibilities are those arising from the gathering of large numbers, especially young people, in defense industries. These responsibilities the Church tried to meet through its regular parishes and its various social agencies such as Church Mission of Help.

As a result of the withdrawal of American Bishops from Japan (in carrying out the provisions of government regulations) the Church in that country, Nippon Sei Ko Kwai, elected Japanese to lead the dioceses formerly headed by Americans. The Japanese Church was already showing definite signs of ability to accept the new responsibilities and real leadership.

The Presiding Bishop's Fund for World Relief administered by the National Council's Department of Social Relations coordinated many tasks arising out of the world situation and gave help in many directions. Chief among these was its aid to refugees. Working closely with the American Committee for Christian Refugees, the Fund was able to secure many affidavits for support, passage money, resettlement opportunities and a vast amount of hospitality and friendly service for the refugees from racial, political, and religious persecution in Europe.

Other events of the year 1941 which should be noted are: The setting apart of the Presiding Bishop's Seat in the Cathedral of St. Peter and St. Paul in Washington, D.C.; the opening of the full length of the Cathedral of St. John the Divine, New York; a survey of the Church's work in the Hawaiian Islands (prior to Pearl Harbor) undertaken at the request of the Bishop of Honolulu and with his full cooperation; the 110th anniversary of the New York Protestant Episcopal City Mission Society; the campaign in the Diocese of Delaware to free all its parishes of debt—an indication of a trend throughout the Church.

During the year 1941 eight retired Bishops and one Suffragan Bishop died, three Bishops were consecrated: Noble C. Powell (Coadjutor: Maryland), Oliver L. Loring (Maine), Wallace E. Conkling (Chicago).

In 1941 the total number of communicants of the Episcopal Church in 7,835 parishes and missions was 1,519,048, an increase of 34,434 over the preceding year. The baptized persons numbered 2,162,022. The clergy numbered 6,200; 154 priests were ordained. In the 5,000 church (Sunday) schools, 472,694 pupils were enrolled. Baptisms during the year numbered 68,990, and confirmations 70,100. The government of the church centers in a General Convention which meets triennially.

The next session, the 54th, will be held in Cleveland, Ohio, in October, 1943. Between sessions of the General Convention the affairs of the church are conducted by the National Council.

The headquarters of the National Council, which is the board of directors of the Domestic and Foreign Missionary Society, is in the Church Missions House, 281 Fourth Avenue, New York. The official magazine is *FORTH—The Spirit of Missions*, Joseph E. Boyle, editor. The president of the National Council is the Presiding Bishop, the Rt. Rev. H. St. George Tucker, Bishop of Virginia.

PRUSSIA. See GERMANY under *Area and Population*.

PSYCHIATRY. As in all branches of science the increasingly disturbed state of the world has had a marked effect upon psychiatric research. The quota of clinical and laboratory studies of peace time has fallen off and the free exchange of scientific thought between nations has been checked. The war psychosis has engaged the attention of numerous writers in various fields, especially since the manifesto signed by 339 psychiatrists of 30 nations addressed to the statesmen of the world by the Netherlands Medical Association in 1935, wherein the pathologic and atavistic characteristics of the war mentality were pointed out and indicated prophylactic measures urgently advocated. Medicine recognized with apprehension the sociopathologic trends of which Germany was the infectious center; the statesmen of the world paid no heed. The psychopathic personality of the arch dictator-aggressor has also been dealt with by psychologists, psychiatrists, sociologists, anthropologists; and his morbid mentality and sadistic character have been increasingly demonstrated by his behavior and his utterances.

An outstanding event of the year was the visit to the United States and Canada of Dr. Robert D. Gillespie, psychiatric specialist to the R.A.F. who came as the Salmon lecturer. Dr. Gillespie spoke in key cities across the continent and also made his services available to military authorities in Washington and Ottawa. Significant points in his addresses: remarkably low incidence of neurosis in the Royal Air Force, owing to extreme care in selecting recruits; importance of shelter life and community centers in preventing nervous manifestations, the paramount value of useful activity for all classes in the common effort in fighting the war of nerves; extraordinary stamina of civilians under air raids; predisposition to neurosis of those who were timorous and nervous as children; striking immunity of children in general to fear of air raids unless adults around them become terrified; occasional examples of cure of neurosis and strengthening the personality through the very demands of service in civilian defense; war psychoses and neuroses are not different from those of peace time.

An extensive literature on military psychiatry grew up during and following the last war and is now expanding. Billings (*Am. Journ. Med. Sci.*, June, 1941) gave an excellent survey of the literature since 1938.

Lauren H. Smith, discussing "Psychiatric Aspects of Military Medicine" (*Med. Clinics of N. Amer.*, Nov., 1941), surveys the whole problem of the mentally unfit or disabled soldier. If all other considerations were disregarded, the financial aspect of this problem alone places it in the forefront of national economy. From 1923 to 1940 the tax payers contributed through the Veterans Administration to neuropsychiatric claimants from

the armed forces approximately one billion dollars. It has been estimated that every military mental patient will cost the nation during his lifetime between \$30,000 and \$34,000. The corresponding figure for civilian patients is about \$7,000. Brown (*Lancet*, May 31, 1941), Baillie (*Am. J. Psychiatry*, Jan., 1941), Campbell (*Journ. Am. Med. Assn.*, Apr. 26, 1941), and Sullivan (*Psychiatry*, Aug., 1941) presented various phases of this subject.

The vital question of civilian morale is dealt with in a remarkable volume issued by the Committee on National Morale, entitled "German Psychological Warfare" (1941). The November, 1941, issue of the *American Journal of Sociology* is devoted entirely to the subject of national morale, discussed by various authorities.

In the clinical field the disorders grouped under the heading 'schizophrenia' continue to claim major attention both in inquiries into the nature of these conditions and in studies of the newer empirical therapies. There is considerable agreement that at least two clinical subgroups can be separated: (a) a severely constitutional type with regressive symptoms during adolescence or earlier and a generally progressive course, which may be termed 'essential schizophrenia,' and (b) a form with more prominent reactive features, occurring in a previously well developed and functioning personality, with less uniform and characteristic symptoms than in the 'essential' type, and with more favorable outlook.

The severer forms are sometimes traceable to childhood. Bradley (*Schizophrenia in Childhood*, 1941) presents personal observations of these fortunately somewhat rare conditions in which the young patient gives the impression of seeking to withdraw from his environment. As would be expected clinical pictures are less clear-cut and without differentiation into the subtypes described by Kraepelin in the later-age cases.

Hypoglycaemic shock induced by insulin remains the treatment of choice in properly selected cases of schizophrenia. Emphasis must be placed upon the qualification 'properly selected.' It has been found that insulin following a course of electroshock treatments may give better results than insulin alone. Goldfarb (*Am. J. Psychiatry*, Nov., 1941) has also found the administration of vitamin B₁ advantageous during the course of insulin therapy. Electroshock is being used more extensively at the expense of other methods of convulsive therapy. The tendency is toward more conservative application however, 6 to 10 treatments usually being considered the maximum. Work is in progress on the use of weaker, potentially less dangerous current. Electroshock is mainly serviceable in the so-called affect psychoses (manic-depressive and involutional melancholia). See BIOLOGICAL CHEMISTRY under *Vitamins*.

Zehnder (*Monatsschr. f. Psychiatr. u. Neurol.*, 103: 231, 1941) in a study of schizophrenic siblings, on the basis of 92 cases in 38 families, found wide divergence of clinical types among children of the same family. These variations he attributed to environmental differences, a conclusion seemingly supported by the fact that psychoses developing in siblings in the same age range are likely to be similar, and dissimilar in siblings far apart in age.

There has been progress in biochemical and physiological studies as related to behavior and mental states. In an important symposium held by the American Association for the Advancement of Science on "Internal Environment and Behavior"

(*Am. J. Psychiatry*, Jan., March, May, 1941) McFarland, Gellhorn, Adolph, Shock, and Richter reported experimental work upon the delicate balance between internal body states and psychic, sensory, and motor functioning. Significant findings were: "the basic role of oxygen in neural activity" and the great sensitivity of psycho-physiological processes to changes in oxygen supply; the effects of hypoglycaemia in decreased cortical activity with increased excitability of the sympathetic centers; the consequences of disturbed water balance; the effects of alterations in acid-base equilibrium ("slight increases in pH and decrease in CO₂ tension tend to increase motor reactivity . . . but to decrease functions involving higher levels of the central nervous system"); the importance of behavior factors in maintaining a constant internal environment and the role of the endocrines.

The role of vitamins in nervous health and disease has been reviewed by Herman Wortis and Norman Jolliffe. The former, in 1939, summarized clinical advances to date with respect to vitamins A, C, and D (*N.Y. State J. Med.* 39, 1178). The two authors now continue in the same Journal (July 15, 1941) in a survey of work with vitamin B₁ (thiamin), nicotinic acid, vitamin B₆ (pyridoxine), and vitamin E (alpha tocopherol).

In the field of encephalography, in which steadily accumulating data are throwing new light upon the various processes going on within the tissue of the brain, it is important to note the appearance of Gibbs and Gibbs' monumental *Atlas of Encephalography* (1941), an authoritative work of reference, published during the year in which Hans Berger, the originator of the method, died.

Recent years have been characterized by a succession of drastic treatment measures, applied principally at first in schizophrenia and later in almost all forms of mental disorder. Among these heroic methods the most sensational was a mutilation brain operation devised by Moniz of Lisbon (*Lisboa méd.* March, 1936). This operation, referred to as prefrontal lobotomy (Moniz also used the monstrous term "psychosurgery"), consists in cutting through the white matter of the frontal poles of the cerebral hemispheres just anterior to the ventricles. The grey matter (cortex) is left intact. The correct designation of the procedure is therefore "prefrontal leucotomy." The operation was introduced into the United States by Freeman and Watts of Washington and has been resorted to by neurosurgeons and psychiatrists in several other centers. Freeman (*J. Am. Med. Assn.*, Aug. 16, 1941) reported 80 cases with varying favorable results in 54 (20 regularly employed, 22 keeping house, 7 partially employed, 5 still in institutions). The severance of fiber tracts between the frontal lobes and lower brain centers undoubtedly reduces the capacity to experience emotional distress and lessens morbid preoccupation with self. Apparently also it renders thinking somewhat more superficial and impairs the critical faculty. In a word, by partially cutting off the newest part of the brain it would appear that mentality is reduced to a more primitive level.

There is general agreement that prefrontal leucotomy should only be resorted to after all other treatment measures have been given reasonably long trial and have failed and a chronic course of mental illness seems to be in prospect. In such cases, particularly the severe melancholias of later life and also in certain schizophrenias of long standing, the operation deserves consideration. The mitigation of suffering even at the expense of some impairment of the higher mental faculties may be a desirable goal. From the scientific standpoint this

procedure affords opportunity for valuable psychological and personality studies. See SOCIETIES under *Psychiatric*.

CLARENCE B. FARRAR.

PSYCHOLOGY. Military Aptitudes. R. M. Yerkes urges that psychology be recognized as science and profession basic to all forms of human engineering, and that professional schools of psychology with high admission standards be established, after the model of the best in medicine and engineering. K. M. Dallenbach is chairman of the Emergency Committee in Psychology, appointed by the Division of Anthropology and Psychology of the National Research Council. This committee has prepared a bibliography of psychological publications relevant to war and military endeavor (C. C. Pratt, Editor). The Committee on Selection and Training of Airplane Pilots of the National Research Council has also prepared an extensive bibliography.

W. V. Bingham headed the Committee on Classification of Military Personnel Advisory of the Adjutant General's Office. This committee devised and standardized several equivalent forms of a group psychological test which is given to new recruits at reception centers, to divide them into broad groupings with respect to their ability to learn quickly. A clerical aptitudes test and a mechanical aptitudes battery are given to recruits in the upper four groupings. Those in the lowest grouping receive a nonlanguage test. A training program for military psychologists will be given to selectees with the desired professional background.

Army motor transport personnel are being selected carefully by established methods of analyzing driver ability and minimizing accidents. It is generally agreed that the army should select only men who can stand additional strain, are at least fairly intelligent, and are adaptable to a new plan of life and new standards. The first step is to educate local draft boards. A. D. Leigh found that the bulk of treatment cases in an army driver training center were neurotics who should have been detected and eliminated by a civilian board.

S. A. Cohen points out that neurotic officers are a problem even if they have superior intelligence. Those who do not have superior intelligence are a liability. D. M. Bullard points out that civilian adjustment does not signify a capacity for military adjustment. The testing of army recruits was developed in America during the last world war, but carried to a high point of efficiency by Germans prior to the present war. *German Psychological Warfare: Survey and Bibliography*, by L. Farago and L. F. Gittler, (New York: Committee for National Morale), includes psychological problems of leadership, selecting and testing of personnel, psychology of military life, and psychology of combat.

Employment Tests. Experience with Employment Tests, edited by H. Moore, describes and evaluates various tests and also reports the specific experiences of several large industrial concerns using tests in their personnel program. Job analysis, improved training procedures, and psychologically guided management are contributing to war production. The National Institute of Industrial Psychology is devising plans for the rapid systematic training of operatives in engineering and manufacturing processes. J. W. Rigel reports studies of foreman-training programs in 50 companies. Among practical handbooks are *Training Workers and Supervisors* by C. Reitell (New York: Ronald), *How to Supervise People* by A. M. Cooper (New York: McGraw-Hill), and *How to Select and Direct the Office*

Staff by E. A. Richards and E. B. Rubin (New York: Harper).

Psychological research is contributing to a reduction of industrial hazards of many sorts. A. R. Lauer and E. H. Silver have investigated the problem of night driving in relation to vision. Financed by the Interstate Commerce Commission, the Division of Industrial Hygiene of the United States Public Health Service conducted an investigation to determine the physical and psychological effects of driving interstate trucks for various periods of time. As the length of the drive increased, there was a corresponding decrease in the functional efficiency of the driver.

W. A. Rosenblith has studied industrial noises and industrial deafness. T. S. Littler finds that aviators suffer temporary high-tone deafness after flights of only one hour, and that after recurrent exposure a permanent impairment of hearing may be induced. P. N. Pastore studied hearing among experienced aviators and found that less than half had retained normal hearing, though few were aware of the impairment. Suitable protection would prevent this loss.

Physical Handicaps. The psychological problems of various handicapped groups have been intensively studied. Research findings accumulated over many years are brought together in such books as *Contributions to a Psychology of Blindness*, by S. P. Hayes, (New York: American Foundation for the Blind), and *The Psychology of the Physically Handicapped*, by R. Pintner, J. Eisenson, and M. Stanton (New York: Crofts).

Pure Science. Paralleling the advance in applied psychology has been a wealth of research in pure science. There have also been developments in theory, and some suggestions for radical revision. E. Duffy contends that the conceptual categories of psychology, based on a traditional and a priori analysis, fail to describe functionally unitary processes. He proposes to substitute three categories which recognize the adjustive, goal-directed character of behavior: (1) maintenance of direction, (2) response to relationships, and (3) energy level. *Man on his Nature*, by C. S. Sherrington, (New York: Macmillan), argues for the acceptance of energy on the one hand and mind on the other as a working biological unity, though it is still impossible to explain that unity at the present time. Among new general texts are *General Psychology*, by R. B. Cattell, (Cambridge: Sci-Art), and *Psychology*, by J. J. B. Morgan, (New York: Farrar & Rinehart).

Intelligence and Testing. G. D. Stoddard defines intelligence as "the ability to undertake activities that are characterized by (1) difficulty, (2) complexity, (3) abstractness, (4) economy, (5) adaptiveness to a goal, (6) social value, and (7) the emergence of originals, and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional forces." Stoddard finds evidence that mental development is determined by cultural conditions. In *Time and the Mind* (Cambridge: Sci-Art), H. Babcock contends that "the distinguishing characteristic of intelligence is . . . the potential degree to which one can abstract and generalize, can express these functions symbolically, and use these symbols in future thinking." R. B. Cattell, S. N. Feingold, and S. B. Sarason report the development of a culture-free intelligence test.

The Measurement of Infants and Young Children, by P. Cattell, (New York: Psychological Corporation), describes the author's new infant intelligence tests, a downward extension of the Re-

vised Stanford-Binet, covering the range from three to thirty months. M. Roff finds evidence that the so-called constancy of the I.Q. is due primarily to the retention by each child of the skills and knowledge which determined his scores in previous years, and is not due at all to correlations between earlier scores and later gains or increments. S. R. Heath, Jr., reports the case of a boy who gained steadily on successive retests, beginning with an initial Binet I.Q. of 41 at the age of 3.7 and attaining an I.Q. of 91 at 11.1. M. W. Richardson recommends that the age scale technique in its present form be abolished entirely and be supplanted by reliable homogeneous tests of single functions.

In South Africa, H. A. Reyburn and J. G. Taylor found five factors present in certain intelligence tests: an immediate memory factor, a verbal factor, mental dexterity in dealing with perceived objects, ability to find or make a significant pattern in a mass of irrelevant material, and ability for logical elimination of irrelevancies. D. M. Johnson and F. Reynolds find two factors in tests of verbal ability, F (flow of responses) and S (selection of responses). W. Harrell and R. Faubion find that mechanical ability depends on several factors, perceptual, verbal, reasoning, and a knowledge of mechanical processes; and in routine jobs where objects are manipulated, manual dexterity is also important. *The Factors of the Mind: An Introduction to Factor-Analysis in Psychology*, by C. Burt (New York: Macmillan), is directed to the general psychologist who may have little mathematical or statistical knowledge. *The 1940 Mental Measurements Year-Book* (Highland Park, N.J.: Mental Measurements Yearbook), edited by O. K. Buros, contains descriptions, references, and critical reviews of old and new standardized tests and books on mental measurement. *Measurements of Human Behavior*, by E. G. Greene (New York: Odyssey), is a comprehensive text. *Measurement in Today's Schools*, by C. C. Ross (New York: Prentice-Hall), is concerned primarily with achievement testing. *Educational and Psychological Measurement* is a new quarterly, edited by G. F. Kuder (Chicago: Science Research Associates).

Mental Defectives. *The Practice of Clinical Psychology* by S. D. Porteus, M. Hunter, and C. J. Herrick (New York: American Book) gives a clear, composite picture of clinical psychological problems and methods in three different parts of the world. P. Blanchard points out that in clinical work some very low scores on intelligence tests are probably due to Burnham's pseudo-feble-mindedness or to Anna Freud's neurotic inhibitions with restriction of ego activities. Hence, caution in diagnosis and prognosis is necessary. W. J. Ellis urges increase and improvement in facilities for discovering defectives in their earliest years, more efforts to make school systems aware of their special needs, community care and supervision for those discharged from special classes and institutions, and emphasis in institutional programs upon the early return of hopeful cases to the community. Since State institutions provide for less than a fifth of the feble-minded, C. H. Town urges creation of a local agency to meet the problems of the feble-minded in the community.

A. A. Jewell reports a follow-up study of 190 mentally deficient children excluded from public schools of the District of Columbia. Their I.Q.'s ranged below 55. The majority were well adjusted in their homes, and social misconduct was not serious, though about one sixth were institutionalized. R. S. Fried points out that the nervous energy of mentally deficient children should be con-

served by frequent relaxation periods. When this is done, nail biting, irritability, and many functional difficulties disappear. H. Muskowitz finds that in selected cases prolonged administration of benzedrine sulphate raises the ability of the mentally handicapped to the point where educational training can be utilized.

Educational Psychology. A. I. Gates suggests the need for educational psychologists in public and private schools and nursery schools, libraries, museums, adjustment service agencies, institutions for handicapped adults, hospitals, department stores, radio studios, publishing houses, government agencies, and elsewhere. According to L. Carmichael, the educational institution should understand the individual as completely as possible: his physical makeup, social background, personality, and the psychometric patterning of his capacities. Then it should work out sympathetically with the individual himself a plan-of-life and educate him to undertake his own education, a process which should continue throughout life. W. W. Cook finds that high standards of promotion result in a high percentage of overage pupils in the upper grades of school, thus reducing the average intelligence and achievement of the class.

Three Hundred Gifted Children. by M. R. Sumpston (Yonkers-on-Hudson: World Book), is a follow-up study of the results of special education of superior children in Cleveland Compared with equally gifted graduates from the regular school classes, the specially educated excelled in leadership ability, reading interests and activities, social responsibility, and the development of individual aptitudes. Health was not impaired and fundamental knowledge and skills were not neglected.

New Methods vs. Old in American Education, edited by G. D. Baker (New York: Teachers College), is an analysis and summary of recent comparative studies by the informal committee appointed by the Progressive Education Association to report on evaluation of newer practices in education. In general, the new methods show gains in initiative, knowledge of contemporary and world affairs, and social participation without loss of academic proficiency in the usual school subjects. N. E. Drought finds that students from progressive secondary schools are at least as successful in college work as those presenting conventional credits, while those from six of the most unconventional schools are distinctly more successful.

There have been numerous studies of factors making for success in college and university work. I. H. Anderson and W. F. Dearborn find a positive relationship between reading ability and college achievement *Ten Years of Research in Reading*, by A. E. Traxler, M. Seder, and others (Educ. Rec. Bull.), is an annotated bibliography and brief summary of studies between 1930 and 1940. H. D. Worthy recommends science materials and activities in remedial reading programs, to maintain interest in subject matter. The Readability Laboratory of the American Association for Adult Education finds that many young adults fail to read nonfiction in book form, partly because it is not readable and partly because they have been prejudiced against it in school. The Laboratory is encouraging the making of books that will have more lucidity and appeal.

Among recent books are *Psychology in Education*, by D. Starch, H. M. Stanton, and W. Koerth (New York: Appleton-Century); *Educational Psychology*, by G. W. Hartmann (New York: Teachers College); *Mental Health in the Classroom*, edited by P. A. Witty and others (Washington, D.C.:

National Education Association); *Mental Hygiene in Education*, by E. W. Tiegs and B. Katz (New York: Ronald); *Some Basic Problems of Behavior*, by M. Sherman (New York: Longmans, Green); *Readiness for Learning*, edited by G. Hildreth (Washington, D.C.: Association for Childhood Education); *The Literature of Adult Education*, by R. A. Beals and L. Brody (New York: American Association for Adult Education, and *Encyclopedia of Educational Research*, edited by W. S. Monroe (New York: Macmillan). In the guidance field are *A Guide to Guidance*, by C. M. Smith and M. M. Roos (New York: Prentice-Hall); *Principles and Techniques of Guidance*, by D. W. Lefever, A. M. Turrell, and H. I. Weitzel (New York: Ronald); *Vocational Guidance for Boys: A Program for Schools and Social Agencies*, by R. C. Cole (New York: Harper), and *Principles and Techniques of Vocational Guidance*, by G. E. Myers (New York: McGraw-Hill).

Child Psychology. G. Lewin and K. Lewin contend that democratic education cannot start with an autocratic treatment of the baby and then slowly shift to democratic methods. It should create a democratic atmosphere for and within the actual world of the child. S. Ackerly and R. Mellor find the nursery school valuable for teaching child guidance by the demonstration method. Concerning afternoon sleep of nursery-school children, R. J. Dales points out marked individual differences and the necessity of considering the individual's need in any program of regulation. R. Barker, T. Dembo, and K. Lewin observed preschool children in free play and in a frustrating situation, and found that during frustration, constructiveness decreased on the average by more than 17 months of mental age. H. Jost has measured physiological changes during frustration. C. Landreth, studying crying of young children in the home and in the nursery school, found that in the nursery school crying was usually associated with conflicts with other children, but in the home with conflicts with parents, frequently over health routines.

L. Bender and F. Vogel find the tendency of certain children to create imaginary companions is a healthful mechanism to supplement environmental deficiencies. *Wolf Child and Human Child*, by A. Gesell (New York: Harper), an interpretative account of a Hindu child brought up by wolves, throws light on the nature-nurture controversy. W. Blumenfeld contends that unrest, moodiness, and introversion of adolescence, commonly attributed to biophysical causes, are really due to the social and cultural conflicts of youth. Outstanding among new periodicals is *The Nervous Child*, a quarterly journal of psychopathology, psychotherapy, mental hygiene, and guidance (Philosophical Library), edited by E. Harms, L. Bender, R. C. Bernreuter, B. Glueck, I. Kanner, K. Lewin, C. M. Louttit, T. V. Moore, M. L. Reymert, A. Runes, E. A. Strecker, E. Wexberg, and I. S. Wile.

M. Huschka found that among 488 problem children 41.6 per cent had mothers suffering from psychopathological conditions. These mothers were hard to treat because they had the habit of projecting their difficulties on the children. A. B. Weiss-Frankl finds the play interview useful in dynamic diagnosis of the child's personality, and in providing common bases for discussion between child guidance worker and parents, which help the parents to use their own experiences with the child constructively. E. Benjamin points out that in early childhood, negativism, resistance, maliciousness, and feeding difficulties are always the result of anxiety or inner insecurity. P. Greenacre finds that

a pre-anxiety reaction occurs in foetal life but that painful situations in the first post-natal weeks serve to heighten the anxiety potential, thereby laying the foundation for severe reactions in later life. A. L. Billig finds that the onset and occurrence of fingernail biting is associated with anxiety, fear, suspense, or excitement for which no adequate outlet is permitted.

W. Boyd, C. Burt, and others have studied the effects of wartime evacuation of children. C. Burt comments on the unexpected facility of adaptation and the very slight increase in delinquency and nervous disorder. T. Brander found that in Finland voluntary evacuation of children was relatively free from undesirable effects but that forced evacuation, with its physical discomforts and mass hysteria, resulted in symptoms of amnesia followed by depression, anorexia, enuresis, tics, night terrors, etc. *Essentials of Child Psychology*, edited by C. E. Skinner and P. L. Harriman (New York: Macmillan), discusses every aspect of child development. *Patterns and Problems of Development*, by C. M. Child (Chicago: Univ. Chicago Press), is a textbook of developmental physiology.

Social Psychology and Personality. *Life, Liberty, and Property*, by A. W. Jones (Philadelphia: Lippincott), reports a questionnaire study of attitudes which suggests that our society is splitting into two or more groups with fundamentally different ethical ideas. R. B. Perry urges revivifying our common democratic creed. S. Z. Orgel finds that delinquency depends more on life history than heredity. The development of the ego and superego are problems of identification. In the Citizenship Training Department of the Boston Juvenile Court, according to K. I. Wollan, a group leader impresses the delinquent with his similarity to the nondelinquent, and encourages independence of decision and the idea of growth away from asocial behavior. J. E. Oltman, S. Friedman, and others regard delinquency and criminality as one symptom of a disordered personality derived from conflicts, insecurity, and maladjustments of childhood, due to such situations as a disrupted home, a cruel domineering father, an overprotective mother, or unsuccessful competition with siblings or schoolmates.

B. Karpman argues against the traditional legal concept of a clearcut separation between sanity and insanity and precise knowledge on the part of the criminal of the differences between right and wrong. A. J. Rosanoff, L. M. Handy, and I. R. Plesset, from a study of 409 pairs of twins, conclude that cerebral birth trauma is often a predisposing factor for delinquency. J. Lander found that 99 of 116 delinquent boys had suffered from parental rejection, parental incompatibility, parental instability, or some similar traumatic influence. Lander feels that neither institutionalization nor foster home care offers a solution, but that in kindergarten the teacher who gives a child a sense of emotional warmth and security will have little difficulty in giving him a conscience also. In follow-ups of delinquent boys seen by the Division of Mental Hygiene of Massachusetts, D. A. Thom and F. S. Johnston found that the percentage of satisfactory adjustments greatly exceeded prediction.

R. Stagner, M. Ginsberg, and others have studied causes of war. B. Malinowski points out that it is fallacious to regard war as a necessary result of man's biological nature. In human societies the impulse of anger is usually transformed into attitudes of hostility or acts of violence which are culturally determined. Conflicts are subject to norms of custom, technique, ethics, and law. R. Pearl points out that belligerency for its own sake is not a normal

way of life for any organism. The basic biological principle underlying belligerent behavior is the will-to-live. R. H. Bruce elicited competitive behavior in rats by an arrangement such that only one animal could drink at a time. Dominance occurred only when the competitive element was introduced.

Outstanding among new books is *Social Psychology of Modern Life*, by S. H. Britt (New York: Farrar & Rinehart). A. I. Hallowell recommends the Rorschach for studies of personalities in primitive societies because of the absence of literacy requirement and the usability by relatively untrained examiners. M. R. Hertz points out that despite the copious literature on the Rorschach, real scientific validation is lacking. There are many new and promising approaches to personality study. According to J. D. Frank, recent experimental studies of the level of aspiration offer a promising approach to problems of the genesis of the self and its relation to achievement, social environment, success and failure, etc. H. A. Reyburn and J. G. Taylor find that introversion and extroversion are not unitary characteristics but may be analyzed into several factors. L. D. Zeleny finds that leadership ability can be developed by instruction and practice, provided the practice is done in groups similar to real life groups. E. Murray, arguing that social misunderstanding is largely due to immaturity and maladjustment of speech personality, stresses the importance of speech development in college education. Among new texts are *Personality and Life: A Practical Guide to Personality Improvement*, by L. P. Thorpe and J. N. Holliday (New York: Longmans Green); *Psychology of Personal Adjustment*, by F. McKinney (New York: Wiley; London: Chapman & Hall), and *Personal Problems in Everyday Life: Practical Aspects of Mental Hygiene*, by L. E. Travis and D. W. Baruch (New York: Appleton-Century). See SOCIETIES under *Psychological*.

MABEL F. MARTIN.

PSYCHOTECHNOLOGY. See **PSYCHOLOGY**.

PUBLIC ASSISTANCE. See **CIVILIAN CONSERVATION CORPS**; **NATIONAL YOUTH ADMINISTRATION**; **RELIEF**; **SOCIAL SECURITY BOARD**, **WORK PROJECTS ADMINISTRATION**; articles on States under *Social Security*.

PUBLIC BUILDINGS ADMINISTRATION (PBA). See **ARCHITECTURE** under *Defense Housing*; **ART**.

PUBLIC FINANCE. The national finances were placed virtually on a war basis during 1941 as a result of the addition of \$46,000,000,000 to aggregate defense appropriations, contract authorizations, and recommendations in the course of the year. Added to the total of \$28,480,000,000 at the beginning of the year, the cost of the defense program was thus raised to almost \$75,000,000,000, a sum by far exceeding the entire cost of our participation in the first World War. It should be noted that this entire defense program was launched before the actual involvement of this country in war. It represented only the cost of preparation for war and aid to the beneficiaries of lease-lend legislation. President Roosevelt estimated that war expenditures, which at the end of 1941 were running at the rate of two billions monthly, would probably surpass five billion dollars a month during the fiscal year beginning July 1, 1942.

Since only about 40 per cent of the enormously enlarged budget was to be met out of taxes, the chief fiscal problem facing the Administration was to borrow as needed the largest sums ever required by the American Treasury. The public debt increased \$5,993,000,000 in the fiscal year ended

June 30, 1941. Increases in the public debt of \$21,-650,000,000 in the 1942 fiscal year and \$39,808,-000,000 in the 1943 fiscal year were anticipated by the President, so that he estimated that, on June 30, 1943, after 18 months of war, the national debt would rise to \$110,421,000,000.

The Treasury explicitly recognized that it would be highly desirable to raise these sums through sales of its obligations to ultimate investors, rather than to banks. When bonds are sold to individuals and corporate buyers other than banks, purchasing power is absorbed and the pressure to buy goods is reduced. This helps to stabilize commodity prices. On the other hand, when banks buy bonds they pay for them with an increase in deposits, thus leaving the total of purchasing power undiminished and adding to the supply of liquid funds available for the purchase of commodities. Despite the recognition of the desirability of selling new issues of Federal securities to the banks, the rapid rise of the rate of Government borrowing compelled the Treasury to rely upon commercial banks to a growing extent in finding a market for its obligations.

Federal Revenues. Receipts of the Federal Government aggregated \$8,268,000,000 in the fiscal year ending June 30, 1941, as compared with \$5,387,000,000 in the 1940 fiscal year. These receipts included payroll tax collections, the bulk of which were turned over to the Federal old-age and survivors insurance trust fund for the payment of old-age pensions under the Social Security Act. The largest increase in Federal revenues occurred in income taxes, which produced \$3,469,000,000 for the 1941 fiscal year, as compared with \$2,125,-000,000 in the preceding 12 months, a rise of \$1,344,000,000. Miscellaneous internal revenues rose \$622,000,000 to \$2,967,000,000. Higher tax collections reflected not only higher rates and new imposts provided by the 1940 and 1941 revenue laws, but also the record level of national income which boosted receipts from older taxes. (See **TAXATION**)

The chief sources of Treasury revenues in the year ended June 30, 1941, with estimates for the 1942 and 1943 fiscal years that make no allowance for additional taxes to be voted by Congress after 1941, follow:

RECEIPTS FOR THE FISCAL YEAR 1941 AND ESTIMATED RECEIPTS FOR THE FISCAL YEARS 1942 AND 1943

1. Revenue	Estimated, 1943	Estimated, 1942	Actual, 1941
Internal revenue			
Income tax (Including tax on unjust enrichment)	\$11,316,000,000	\$7,147,000,000	\$3,469,637,848.48
Miscellaneous Internal Revenue	4,206,467,000	3,862,965,000	2,966,863,798.83
Federal Insurance Contributions Act Taxes	1,394,100,000	900,400,000	690,554,674.33
Federal Unemployment Tax Act Taxes	150,400,000	117,600,000	97,676,584.19
Taxes on Carriers and employees	194,400,000	170,700,000	136,942,076.40
Railroad Unemployment Insurance Act Taxes	9,500,000	8,500,000	6,814,717.52
Customs	297,000,000	368,000,000	391,870,013.27
Miscellaneous revenues	284,223,000	240,915,000	508,871,307.81
Gross receipts	17,852,090,000	12,816,080,000	8,268,512,585.50
Deduct net appropriation for Federal old-age and survivors insurance trust fund	1,364,890,000	872,087,000	661,300,733.42
Net receipts	16,487,200,000	11,943,993,000	7,607,211,852.08

Federal Expenditures. Outlays of the Federal Government during the fiscal year ended June 30, 1941, totaled \$12,710,000,000, an increase of \$3,712,000,-000 over those of the year before. National defense outlays were \$6,301,000,000 in the 1941 fiscal year, as compared with \$1,711,000,000 for the previous year. Unemployment relief, despite the fact that industrial activity rose to the highest level on record, took \$1,774,000,000, as compared with \$1,989,-000,000 the year before. The cost of the agricultural adjustment program, covering soil conservation, parity and other benefits to farmers, declined but slightly in the face of the sharp rise in agricultural

prices and farm income which occurred. The "economy bloc" in Congress and business groups criticized the Administration severely for not cutting nondefense expenditures more drastically, but popular interest in this phase of the fiscal problem lagged as it became apparent that such savings would, at best, be quite small by comparison with the fantastic sums that must be spent to fight a modern war.

Expenditures for the fiscal year ending June 30, 1941, with estimates for the two following fiscal years, are shown in the table, on pages 545-546.

Treasury Financing. The deficit of the Federal Treasury for the fiscal year ended June 30, 1941, aggregated \$5,103,000,000. In addition, \$1,148,-000,000 was needed by Government corporations. Of these sums, \$1,385,000,000 was raised through the Social Security funds, which invest their reserves in Government bonds, while the Treasury sold \$4,602,000,000 of its securities on balance and the Government corporations \$972,000,000. In this way, \$708,000,000 more was raised than was required, which went to build up the cash reserves of the Treasury and Government corporations.

The financing of the 1941 deficit, with estimates for 1942 and 1943, was outlined in the Budget as shown in the table at the center of page 546.

The President signed on February 19 a law to raise the national debt limit from \$49,000,000,000 to \$65,000,000,000. On May 1, in order to raise larger sums through the sale of special long-term obligations to investors, the Treasury offered three series of Defense Savings bonds. Series E, similar to the old savings bonds, mature in 10 years and give a yield of 2.9 per cent if held to maturity. Any one individual may purchase \$5,000 of these obligations each year. Series F bonds, also sold at a discount, give a yield of 2.53 per cent if held to maturity 12 years after purchase, and Series G bonds, bearing coupons of 2½ per cent, similarly mature in 12 years. Series F and G may be purchased up to \$50,000 by one owner in any one year. All defense savings bonds are nonnegotiable, but may be redeemed at the Treasury at any time after 60 days from the date of issue for Series E, and after six months for Series F and G. In the case of Series E and F, redemption prior to maturity provides a lower yield, while in the case of Series G

coupon bonds redemption before maturity is at a discount which accomplishes the same result of cutting the yield to the owner. Interest on savings bonds sold after Mar. 1, 1941, is taxable. The Treasury also inaugurated on May 1 the sale of savings stamps of 10c, 25c, 50c, \$1, and \$5 denominations. Sales of defense bonds and stamps rose sharply after our entry into the war.

On August 1, the Treasury inaugurated the sale of another special type of obligations, Tax Anticipation Notes. Series A notes may be purchased by individuals up to \$1,200 in any one year. They may be used to pay personal income taxes due after

EXPENDITURES FOR THE FISCAL YEAR 1941, AND ESTIMATED EXPENDITURES FOR THE FISCAL YEARS 1942 AND 1943

(Estimated and actual expenditures from general and special accounts)

	<i>Estimated, fiscal year 1941</i>	<i>Estimated, fiscal year 1942</i>	<i>Actual, fiscal year 1941</i>
I LEGISLATIVE, JUDICIAL, AND EXECUTIVE;			
1. Legislative establishment	\$26,622,800	\$25,494,800	\$24,172,235.98
2. Judicial establishment	12,681,000	12,311,000	11,425,848.47
3. Executive Office of the President	4,184,000	3,523,500	2,899,564.60
Total, legislative, judicial, and executive	<u>43,487,800</u>	<u>41,329,300</u>	<u>38,497,649.05</u>
II. CIVIL DEPARTMENTS AND AGENCIES			
1. Department of Agriculture	119,161,000	128,050,000	129,117,728.10
Rural Electrification Administration	5,500,000	9,800,000	24,187,152.25
2. Department of Commerce	30,230,000	37,245,600	45,271,633.22
Civil Aeronautics	38,584,000	35,940,000	26,037,086.54
3. Department of the Interior	67,961,800	76,601,300	78,685,940.85
4. Department of Justice	62,086,000	58,716,000	56,702,470.08
5. Department of Labor	11,677,000	12,345,000	12,225,818.56
6. Department of State	24,540,000	21,852,600	20,433,140.26
7. Treasury Department (excluding Coast Guard)	155,169,500	149,663,600	125,090,651.80
8. War Department (nonmilitary)	40,596,000	46,049,000	49,514,984.37
Panama Canal	22,804,000	27,956,000	29,106,073.99
9. District of Columbia, United States share (from Annexed Budget)	6,000,000	6,000,000	6,000,000.00
10. Federal Loan Agency	5,700,000	9,450,000	11,498,193.19
11. Federal Security Agency	62,968,000	59,223,000	55,483,858.12
12. Federal Works Agency	42,700,000	44,818,000	31,654,175.71
13. Other independent offices and establishments	84,768,400	74,460,600	65,769,698.27
14. Refugee relief	17,000,000	46,500,000	16,460,809.53
Unclassified items			180,648.94*
Adjustment for disbursing officers' checks outstanding			596,771.60*
Subtotal	<u>797,445,700</u>	<u>844,470,700</u>	<u>782,456,994.30</u>
15. Post Office Department, deficiency (from Annexed Budget) (see analysis following this schedule)		14,000,000	30,130,553.62
Total, civil departments and agencies	<u>797,445,700</u>	<u>858,470,700</u>	<u>812,587,547.92</u>
III GENERAL PUBLIC WORKS PROGRAM			
1. Federal Security Agency	300,000	800,000	287,440.18
2. Federal Works Agency	108,468,000	206,737,000	217,428,155.80
3. National Advisory Committee for Aeronautics	12,000,000	5,810,000	5,542,268.15
4. Tennessee Valley Authority	145,000,000	145,000,000	51,175,171.37
5. Veterans' Administration	4,500,000	6,000,000	3,425,155.51
6. Department of Agriculture	7,500,000	9,000,000	7,447,484.73
7. Department of Commerce		2,611,000	825,513.50
8. Department of the Interior	135,469,000	148,583,500	111,020,544.63
9. Department of Justice	370,000	340,000	797,618.88
10. Department of State	1,824,000	3,142,000	2,427,208.16
11. War Department (nonmilitary)	162,800,000	185,500,000	172,680,114.52
Total, general public works program	<u>578,231,000</u>	<u>713,523,500</u>	<u>573,056,675.43</u>
IV. NATIONAL DEFENSE			
1. Navy Department	6,849,359,000	5,833,112,400	2,308,658,623.44
2. War Department	18,618,615,000	11,666,710,000	3,672,312,769.19
3. Defense aid (lend-lease)	7,500,000,000	3,500,000,000	21,394,691.36
4. Other	2,818,212,000	1,996,703,000	298,677,081.92
5. Supplemental items	17,000,000,000	1,000,000,000	
Total, national defense	<u>52,786,186,000</u>	<u>23,996,525,400</u>	<u>6,301,043,165.91</u>
V VETERANS' PENSIONS AND BENEFITS	590,087,000	578,116,000	559,255,646.57
VI AIDS TO AGRICULTURE:			
1. Agricultural Adjustment Program	790,220,000	938,902,000	967,762,918.98
2. Commodity Credit Corporation		1,637,000	
3. Farm Tenant Act	4,192,000	7,643,000	27,287,958.63
4. Federal Farm Mortgage Corporation		9,600,000	9,340,201.41
5. Federal land banks		26,800,000	28,874,662.23
6. Farm Security Administration	50,700,000	58,000,000	62,165,326.97
7. Farm Credit Administration	8,938,000	74,500,000	1,227,931.50*
Subtotal	<u>854,050,000</u>	<u>1,117,082,000</u>	<u>1,094,203,136.72</u>
Return of surplus funds from Government corporations			315,000,000.00*
Total, aids to agriculture	<u>854,050,000</u>	<u>1,117,082,000</u>	<u>779,203,136.72</u>
VII. AIDS TO YOUTH.			
1. Civilian Conservation Corps		155,000,000	257,396,531.12
2. National Youth Administration		80,095,000	89,807,637.71
3. Emergency youth program—supplemental items	100,000,000		
Total, aids to youth	<u>100,000,000</u>	<u>235,095,000</u>	<u>347,204,168.83</u>
VIII. SOCIAL SECURITY*			
1. Administrative expenses	27,125,000	23,945,000	26,698,957.43
2. Grants to States	510,700,000	438,100,000	417,747,589.36
Total, social security	<u>537,825,000</u>	<u>462,045,000</u>	<u>444,446,546.79</u>
IX. WORK RELIEF*			
1. Work Projects Administration		875,000,000	1,284,593,920.85
2. Public Works Administration	11,075,000	49,800,000	140,264,355.08
3. Other	4,000,000	17,830,000	27,051,907.99
4. Supplemental items	465,000,000		
Subtotal	<u>480,075,000</u>	<u>942,430,000</u>	<u>1,451,910,183.92</u>

Continued on page 548

EXPENDITURES FOR THE FISCAL YEAR 1941, AND ESTIMATED EXPENDITURES FOR THE FISCAL YEARS 1942 AND 1943 (Continued)

	Estimated, fiscal year 1943	Estimated, fiscal year 1942	Actual, fiscal year 1941
Return of surplus funds from Government corporations	.....	.....	14,000,000 00*
Total, work relief	480,075,000	942,430,000	1,437,910,183.92
X. REFUNDS:			
1. Customs	19,000,000	19,000,000	27,331,472.73
2. Internal revenue	60,005,000	62,002,000	54,220,101.51
3. Processing tax on farm products	8,000,000	8,000,000	8,115,716.68
Total, refunds	87,005,000	89,002,000	89,667,200.92
XI. INTEREST ON THE PUBLIC DEBT	1,675,000,000	1,250,000,000	1,110,692,811.91
Supplemental items	75,000,000	.....	.....
Total, interest on the public debt	1,750,000,000	1,250,000,000	1,110,692,811.91
XII. RETIREMENT FUNDS*			
1. Railroad retirement account	191,359,000	164,292,000	124,350,000 00
2. Government employees' retirement funds (United States share)	107,240,800	102,885,262	92,715,000 00
Total, retirement funds	298,599,800	267,177,262	217,065,000.00
XIII. SUPPLEMENTAL ITEMS—REGULAR	25,000,000	25,000,000	.....
Total, expenditures (excluding debt retirement)	58,927,992,300	30,575,796,162	12,710,629,823.97
XIV. DEBT RETIREMENT	100,000,000	100,000,000	64,280,500 00
Total, expenditures	59,027,992,300	30,675,796,162	12,774,890,323.97

* Excess of credits, deduct

FINANCING OF FEDERAL OPERATIONS, FISCAL YEARS 1941-43
[In millions]

Classification	1941 (actual)	1942 (estimated)	1943 (estimated)
A. SUMMARY OF FEDERAL OPERATIONS			
I. Budget deficit under present tax legislation	\$5,103.4	\$18,631.8	\$42,440.8
II. Government corporations (net outlays)	1,148.8 ^b	2,220.0	2,941.0
Net outlays of Budget and Government corporations	6,252.2	20,851.8	45,381.8
III. Trust funds			
Excess of receipts over disbursements under present legislation	1,385.3	2,018.3	2,763.9
Combined net cash requirements ^c	4,866.9	18,833.5	42,617.9
B. FINANCING COMBINED NET CASH REQUIREMENTS			
By borrowing from the public (net)			
Government issues	4,602.3	19,528.1	34,913.1
Government corporation issues	972.8	710.1 ^a	1,297.8
Subtotal	5,575.1	18,818.0	33,615.3
Under proposed legislation			
Taxes	.....	.....	7,000.0
Increase in social security trust funds	.....	.....	2,000.0
Total	5,575.1	18,818.0	42,615.3
Adjustment for changes in cash balances during year	708.2 ^a	15.5	2.6
Total, financing	4,866.9	18,833.5	42,617.9

^a Deduct.

^b Includes return of surplus funds to the Budget.

^c Includes interest accrued on U.S. savings bonds

Jan. 1, 1942, yielding 1.92 per cent for the period held. Series B notes may be purchased by corporations and used similarly to pay corporate taxes due the Federal Government. Series B obligations, which may be purchased without limit as to amount, give a yield of 0.48 per cent. Both series may be cashed by the holder without waiting for using them for tax payments, if desired. Through the medium of these notes, the Treasury obtains immediate use of

tax funds due it at some later date, while the taxpayer can thus assure that he will have on hand money needed to pay future taxes.

Sales of defense bonds, stamps, and tax anticipation notes month by month during 1941 were reported as in the table at foot of column 1.

The Public Debt. The gross public debt of the nation at the end of the calendar year 1941 was \$57,938,000,000, as compared with \$45,024,000,000 at the end of 1940. The public debt at the end of the 1941 fiscal year, and estimates for the two following years, contained in the President's budget message of Jan. 5, 1942, are tabulated on page 547.

For appropriations, see UNITED STATES and States under *Legislation*; principal foreign countries under *History*. See also BANKS AND BANKING; CUSTOMS, BUREAU OF; FINANCIAL REVIEW under *New Financing*; TARIFF COMMISSION, U.S.; TAXATION; WAR DEBTS; articles on countries and States under *Finance*.

Month	Defense bonds (millions)	Defense stamps (thousands)	Tax notes (millions)
May	\$ 361	\$3,349	\$.....
June	306	2,738	.....
July	335	3,520	.....
Aug.	259	4,372	1,037
Sept.	224	5,192	306
Oct.	262	5,985	475
Nov.	226	6,413	318
Dec.	536	25,699	342
Total for 1941	\$2,509	\$57,268	\$2,478

**GROWTH IN THE PUBLIC DEBT IN FISCAL YEARS
ENDING JUNE 30, (000 OMITTED)**

	<i>Actual 1941</i>	<i>Estimated 1942</i>	<i>Estimated 1943</i>
Public debt at beginning of year	\$ 42,967,531	\$ 48,961,444	\$ 70,612,247
Increase in public debt during year.			
To meet deficiency in revenues and receipts, general and special accounts	5,103,418	18,631,803	35,440,792
To purchase obligations of government corporations . . . . .	... ..	3,019,000	4,368,000
Increase in working balance on general and special account	890,495	.....	.....
Net increase in public debt during year	5,993,912	21,650,803	39,808,792
Public debt at end of year	48,961,444	70,612,247	110,421,039

PUBLIC HEALTH SERVICE. The year 1941 has subjected health organizations in the United States to the crucial tests of national emergency culminating in war. Every branch of the Public Health Service has felt this impact. The burden has fallen most heavily, however, upon the Federal-State cooperative programs for general health services, upon venereal disease control and industrial hygiene.

Division of States Relations. This Division, organized in 1910 as the Division of Domestic Quarantine, was intended to check the interstate spread of communicable disease by use of quarantine restrictions. It soon became obvious, however, that a better method was to help State health authorities build up adequate organizations and facilities to prevent disease at the source.

During the five and one-half years of operation of Title VI of the Social Security Act, which provides Federal funds for States and municipalities to augment health work, there has been a steady growth of basic health services throughout the country. It has not been sufficient to meet the emergency demands of 1941. Military camps and industrial developments brought large new concentrations of population into hundreds of communities. Serious problems began to arise because of inadequate sanitary facilities and means for disease control. In March, 1941, Congress appropriated \$525,000 for improving health personnel and facilities in critical areas during the remaining months of the fiscal year. By June 30, 104 specially trained physicians, engineers, nurses, and technicians had been assigned to this duty. The Public Health Service appropriation for the fiscal year 1942 (beginning July 1, 1941) allows \$1,235,000 for emergency health and sanitary activities. In a later act an additional \$1,940,000 was appropriated to expand these services. The Community Facilities Act of June, 1941, makes available to the Public Works Administration (q.v.) the sum of \$150,000,000 for such facilities as schools, waterworks, sewage disposal plants, sewers, public sanitary facilities, and hospitals. If the project applied for by a community relates to public health or sanitation, it is referred to the Public Health Service which, by reason of its extensive reconnaissance surveys in defense areas during the past year, is able in most cases to clear the application within 24 hours.

While the work of the Division of States Relations has been geared primarily to defense needs and war conditions, substantial progress has been made in normal activities. The total payments to

the States from Title VI, Social Security Funds during the fiscal year ending June 30, 1941, amounted to \$10,722,115, having been increased by \$1,500,000 over the preceding year. Funds budgeted from all sources in the cooperative health program in the 48 States, the District of Columbia, Alaska, Hawaii, and Puerto Rico were \$109,352,919 during the fiscal year 1941, representing an increase of 30.56 per cent over the preceding year; largely because of the extension of cooperative health programs to additional counties and cities which now submit their budgets to the Public Health Service.

Noteworthy improvements were achieved in methods of handling State budgets which, in a number of States, resulted in increased legislative appropriations for public health. Health units under the direction of a full-time health officer totaled 1,669 by June 30, 1941. These units were of three types: the single county unit, the district unit serving two or more counties or other local subdivisions, and the State supervisory unit. Rules and regulations governing personnel management on a merit basis have been established in all State health departments and efforts are being directed toward the same status for local health department employees. During the year, 1,175 applications for training were received from State and Territorial health departments and approved by the Public Health Service district directors; 82.6 per cent of the training was to be financed by Title VI funds.

Although the need for public health nursing service increased, the 23,533 nurses employed by all health agencies on Jan. 1, 1941, was less by 172 than on the same date in 1940.

Division of Marine Hospitals and Relief. This oldest function of the Public Health Service, dating from its origin in 1798, through 26 Marine Hospitals, 126 relief stations and more than 130 contract hospitals provided hospital care for 77,317 persons and out-patient care for 433,706. American merchant seamen made up 40.1 per cent of those receiving hospital care. Among other legal beneficiaries were those of the Veterans' Administration, members of the Civilian Conservation Corps, personnel and dependents of the Coast Guard and the Coast and Geodetic Survey. Freedmen's Hospital in Washington, D.C., which was transferred to the administrative supervision of the Public Health Service in 1940, provided a total of 127,926 days of hospital care and gave 86,665 out-patient treatments during the past year, during which it was for the first time approved by the American College of Surgeons.

Division of Venereal Diseases. During 1941, \$8,200,000 was appropriated under the National Venereal Disease Control Act of 1938 for prevention, treatment, and control of venereal conditions. Almost 90 per cent of this amount was devoted to setting up adequate control measures in the States and territories; \$458,600 was used for intensifying the program in areas where the armed forces are located. Country-wide clinic facilities for venereal disease treatment increased from a total of 1,746 in 1938 to 3,245 in 1941. Approximately 13,400,000 doses of the arsenical drugs for the treatment of syphilis were sold during the past year, an increase of over 100 per cent since 1933. Encouraging results were reported from experiments with the massive dose method of treating syphilis. These indicate a possibility that at least 85 per cent of patients having the disease in an early stage might be cured by five days of treatment as contrasted with usual methods taking a year or more. Considerable progress, also, was reported

from the treatment of gonorrhea with the sulfonamide drugs.

Division of Mental Hygiene. This Division maintains hospitals for drug addicts at Lexington, Ky., and Fort Worth, Texas, and administers the medical and psychiatric services in Federal penal and correctional institutions. (See NARCOTIC DRUGS CONTROL.) St. Elizabeths Hospital for the mentally diseased who are Federal responsibilities, operated with an average daily patient population of 6,663—an increase of 562 over the preceding year. The number of admissions was the highest since 1919.

National Institute of Health (Division of Scientific Research). Research has shifted its emphasis to war medicine. Industrial hygiene, aviation physiology, tropical diseases, chemotherapy, nutrition, the prevention and cure of such warborne diseases as typhus fever, have become problems vital to the successful prosecution of war. There is an increasing demand for vaccines, antitoxins, and serums. Chemists are working toward substitutes for overseas supplies of opium and quinine.

Among successful results of research during the past year has been a substantial protection against whooping cough by use of a two-dose pertussis vaccine, the development of a serum for the treatment of Rocky Mountain spotted fever, a laboratory test to differentiate typhus fever from other rickettsial diseases such as spotted fever, and improvements of the X-ray microfilm for diagnosis of tuberculosis.

In the National Cancer Institute, special attention was focused on gastric cancer. Among numerous studies conducted on the multiple aspects of cancer, new findings were reported on cancer of the lung. Cancer control programs were established in Arizona, New Mexico, Wyoming, Montana, and Idaho, making a total of 39 such programs in the States and territories.

In February, 1941, the Division of Industrial Hygiene of the National Institute of Health was designated to coordinate all activities for health protection of defense workers. The program now in operation includes: the recruitment and training of professional personnel; the provision of industrial hygiene services in Government industrial establishments; laboratory and field research in the cause and control of occupational diseases; and aid to state industrial hygiene units.

Division of Foreign and Insular Quarantine and Immigration. In spite of a large influx of war refugees, with overcrowding and insanitary conditions on vessels which carried them, no case of quarantinable disease entered a United States port during the past year. The rapid expansion of airplane service to the United States and increased incidence of yellow fever in foreign countries made it necessary to establish disinsectization bases at Barranquilla, Colombia, and Maracaibo, Venezuela, as well as inspection bases at Kingston, Jamaica, and at Port-au-Prince, Haiti.

Division of Sanitary Reports and Statistics. Favorable health conditions continued in the United States during the calendar year 1940. Of the important communicable diseases, only influenza and poliomyelitis were above the five-year median. Reported cases of diphtheria, smallpox, and typhoid fever were the lowest on record. Morbidity reports for the first half of 1941 showed a continuation of the influenza epidemic which began late in 1940, a sharp rise in poliomyelitis in June, the beginning of epidemic encephalitis in the West North Central States and a high incidence of measles which indicated that 1941 would be a cyclic "measles" year. The crude death rate for the United States in

1940 was 10.8 per thousand population, a little less than 2 per cent above the rate for 1939 which was the lowest recorded in the history of the United States registration area.

National Nutrition. An outstanding event of the year was the setting in motion of a national nutrition program. In May, 1941, 900 food experts from all parts of the country assembled in Washington for a conference by invitation of the President who asked them to "explore and define our nutrition problems and to map out recommendations for an immediate program of action."

The Conference drew up specifications for a diet adequate for good health and selected from a wide choice of natural foods purchasable anywhere in the country. Announcement was made of new flour standards by which vital elements naturally present in wheat are now conserved. Further recommendations included the continuation of scientific research in nutrition with greater support by Government, industry, and private institutions; the increased production of foods needed for national defense; the extension of the food stamp plan or similar governmental machinery to make essential foods available to nutritionally needy families; and, finally, a nation-wide program of nutrition education.

The United States is profiting by the experience of the British in meeting wartime medical, public health, and nutrition problems. An equally acute problem of the British in securing adequate supplies of protective foods is being worked out under the Lend-Lease Act by the Anglo-American Food Committee in which the Public Health Service participates actively.

Detailed accounts of the activities of the Public Health Service may be found in the Annual Reports of the Surgeon General. For other activities in this field, see topics listed under HEALTH WORK.

THOMAS PARRAN.

PUBLIC WORK RESERVE. See CONSTRUCTION INDUSTRY.

PUBLIC WORKS ADMINISTRATION (PWA). For statement in detail concerning the organization and activities of the Public Works Administration, see 1940 Year Book. By the Independent Offices Appropriation Act, 1942 (Public Laws 28—77th Congress) approved Apr. 5, 1941, the life of this organization was extended to June 30, 1942. The functions of the Public Works Administration may be summarized as follows: (1) To make allotments to finance Federal projects; (2) to make loans or grants or both to non-Federal public bodies to aid in financing the construction of useful public works; and (3) to construct and lease projects, with or without the privilege of purchase, to public bodies. No funds are now available for undertaking new projects of this character.

M. E. GILMORE.

PUBLISHING. See LITERATURE, ENGLISH AND AMERICAN; NEWSPAPERS AND MAGAZINES.

PUERTO RICO. A West Indian Island, forming a territory of the United States. Acquired from Spain through the Treaty of Paris, 1898. Small adjacent islands, Vieques and Culebra, are included in its jurisdiction and statistics. Capital, San Juan.

Area and Population. Area, 3,435 square miles. Population, 1940 (U.S. Census), 1,869,255; 1935 (by special census of the Puerto Rico Reconstruction Administration), 1,723,534; 1930 (U.S. Census), 1,543,913. In 1940 the dwellers in places of

2,500 or more numbered 566,357; the rural population, 1,302,898. The territory had, in 1940, 544.2 inhabitants to the square mile—an exceptional density for an area dependent mainly on agriculture. Births totaled 73,044 in 1939 and came to slightly less than 4 per cent of the population. Deaths in 1939 totaled 32,631 and constituted 17.8 per 1,000, the lowest yearly rate recorded. The births exceeded deaths (1940) by more than 40,000, and comparable though not quite so great excesses had been the rule. Despite an apparent excess of emigration over arrivals from elsewhere, the population gained by 21 per cent in the ten-year period 1930-40. Colored inhabitants (1938) were stated as 417,401; whites, 1,388,079. Populations of cities (1940), San Juan, 169,247; Ponce, 65,182; Mayaguez, 50,376.

Education. Enrollments of pupils in the public day schools in the year ending June 30, 1940, numbered 286,098, or about 15 per cent of the population; of the pupils, 68 per cent were in the lowest four grades; less than 6 per cent were in grades 9-12. Public schools were numerous, 1,773 in all, four out of five were rural elementary schools, teachers numbered 6,294. The year's expenditures for these schools averaged \$25.57 to the pupil in regular attendance; they totaled \$5,470,517 as budgeted.

The University of Puerto Rico, at Rio Piedras and Mayaguez, giving instruction in various branches of higher education, had 4,987 on its roll in 1940. Its faculty and administrative staff numbered 277. A School of Tropical Medicine, attended largely by students from elsewhere, not only gave instruction and conducted research in its field but operated a hospital newly reconstructed to meet contemporary standards.

Production. The territory, as an economic producer, is predominantly agricultural, its main manufactures are those processing its agricultural products. Of some 2,000,000 acres of land area, about 825,000 acres were reported in 1940 as under cultivation. Of the remainder, 780,000 acres were pasture, mainly clear, but some of it wooded, 120,000 acres in farm woodland; and only some 280,000 acres were not in farms. Sugar cane, the most extensive cultivated crop, occupied approximately 300,000 acres, divers minor crops, grouped, 250,000; coffee, 225,000, tobacco, 33,000. Production of sugar in the 1940-41 season was estimated at 832,140 short tons; the U.S. quota of 1941 for Puerto Rican sugar was 818,166 tons. Tobacco, on 33,262 acres, produced in 1939-40 18,369,848 lb.; in value, \$2,572,000. The crop of coffee totaled 23,498,000 lb., worth \$4,247,500 at the price fixed for the domestic market. Crops grown mainly for the farmers' subsistence included sweet potatoes, corn, rice, cowpeas, beans, and bananas. Cotton of the sea-island type was grown on a rising scale: in 1940, on 4,000 acres.

Products of manufactories attained for 1939 a total value of \$109,615,313, as determined by a census published at the outset of 1941. Those employed in factories comprised 2,147 on salaries and 22,267 receiving wages. The total value added to goods by manufacture was \$36,339,865, or close to one-third of the whole value of product. The value of cane sugar totaled \$55,377,402, of which sum the part added by manufacture contributed \$16,496,602, while the wage earners numbered 7,765 and received \$4,501,813. Sugar-refining (separate from sugar-making) totaled \$12,510,477 of product, of which the part added by manufacture made \$2,169,539. Needlework industries, employing 6,378 wage earners, totaled \$20,778,267 of products, \$7,454,994 of that total being con-

tributed by manufacture, and paid \$1,575,814 in wages.

External Trade. In the year ended with June 30, 1940, Puerto Rico imported merchandise to the value of \$107,030,482 and exported to the total of \$92,347,242. Of imports, \$100,517,184 came from the United States; and to that destination went \$90,002,156 of the exports. The year's exports of sugar were 868,568 tons; value \$57,328,790.

For the calendar year 1940 Puerto Rico's imports of merchandise from the United States amounted to \$103,972,709, as against \$86,447,423 for 1939; and exports to the United States declined to \$83,773,274 for 1940, from \$88,977,210 for 1939. Sugar accounted for five-eighths of the exports to the United States; namely, to \$51,800,616 for 1940 and \$58,325,509 for 1939. Other articles exported to the United States: tobacco and its manufactures, \$8,700,595 for 1940 and \$5,006,782 for 1939; rum, \$6,366,261 and \$4,413,129; women's cotton apparel, \$5,248,072 and \$7,671,831; worked linen, \$2,662,387 and \$4,037,672. The main groups of imports from the United States were vegetable foods, \$19,670,656 for 1940 and \$16,394,573 for 1939, textile products (1940), \$15,750,420 and (1939) \$17,418,279; machinery and vehicles, \$12,678,098 and \$8,292,527; other metal goods, \$8,856,557 and \$5,561,450.

Finance. The general fund of the Territorial Government received, in the fiscal year ended with June 30, 1940, insular revenues of \$16,867,933. It expended \$15,393,982. Insular internal taxes made up about three-fourths of the revenue. Of the expenditure, \$5,678,403 was for education; \$2,068,895 for public health. Bonded debt amounted to \$27,200,000 on June 30, 1940.

Transportation. Highways in Puerto Rico were said to have an aggregate length of 11,252 miles in 1939. Surfaced roads maintained by the Territory totaled 1,033 miles. Railroads, aggregating 922 miles, included 574 miles for the special uses of producers of sugar. Pan American Airways maintained frequent service between San Juan and Miami, Florida. Airplanes also covered routes to a number of South American and West Indian points.

Government Under the Organic Act, as passed by the U. S. Congress in 1917 and later amended, Puerto Rico has the status of an organized Territory of the United States. Its citizens are U. S. citizens. A Governor, the chief executive officer, holds office by appointment of the President of the United States, confirmed by the U. S. Senate. The popular vote elects a Legislature of two houses and a Resident Commissioner to the United States.

Governor, 1941, Guy J. Swope and (successor, Sept. 19) Rexford G. Tugwell. Resident Commissioner, Bolívar Pagan.

HISTORY

General Conditions. The Island in 1941 enjoyed such economic improvement, compared to its record of recent years, as amounted to a boom. According to reports made by ex-Governor Swope on his return to the United States in August, business activity, construction, and payments for labor all ran higher than in a number of years. These features of the Island's prosperity had been improving since the autumn of 1939. Influences connected with warlike activity in the United States helped Puerto Rico in 1941. Prices for sugar, in particular, rose during the year, as they had risen during the period 1914-18. Coffee made the best prices in a decade. Employed persons outnumbered any total previously recorded. The exports of native rum

surpassed those of any earlier months, as the higher cost of imported whiskies in the American market encouraged substitution. Activity in construction gained through the prosecution of Federal works of defensive purpose. There was little political disturbance, unless for Nationalist demonstrations against the military draft (see below).

Legislation. The Legislature, as made up by the election of Nov. 5, 1940, convened February 10 in regular session. The Popular party had a majority of one in the Senate and controlled the lower house with the aid of three members of a minor group. The Coalition party, thus reduced to a close minority in the Legislature, claimed privileges of a majority, on the ground that it had reelected its candidate, Bolívar Pagan, to the office of Resident Commissioner. Governor Swope, in making nominations necessary at the time, favored the Popular party and excluded the Coalition from his list. The legislators carried out the Popular party's will by fashioning a mechanism to break up the greater landholdings. This, its chief achievement, was effected by the Land Authority Act, which created a board of 7 members, the Land Authority, designed to bring about the expropriation of landholdings in excess of 500 acres to each proprietor, to purchase the expropriated lands, and to distribute land in small parcels, allowing the buyers long terms for completing payment. The act did not originate the policy of breaking up big estates, for a resolution of the U.S. Congress, voted in 1900, had forbidden the holding of more than 500 acres of Puerto Rican land by one possessor: as the original prohibition had lacked any particular means of enforcement it had stood inoperative for four decades. Other acts restricted plural public employ in any household, created an Insular Power Authority, and exempted \$1,000 from realty tax.

The Legislature met again, in special session, early in November upon Governor Tugwell's call, for the main purpose of putting prices and supplies of goods under public control. For this work it created a Civilian Supply Committee. This body, in conjunction with the Governor, had authority to fix prices for food and to buy, using a fund of \$1,000,000, commodities needed in the Island. The committee bore some likeness to the Puerto Rican Food Commission, which had operated 23 years before. The Legislature later, December 11, rejected a measure to let the President of the United States declare martial law in Puerto Rico as Secretary of War Stimson had asked.

Frequent Change of Governors. Three successive persons wielded the powers of governor in the course of 1941. José M. Gallardo, acting Governor, held through from 1940 until the appointment of Guy J. Swope in January. Swope, previously Auditor of Puerto Rico, served as Governor until shifted to Washington early in August to become Director of the division of territories and insular possessions in the Department of the Interior. Rexford G. Tugwell, a figure of note for some time in the personnel of the New Deal, next took office as Governor, September 19. If one counted Governor Leahy, who had left office Nov. 23, 1940, Tugwell was the fourth to perform the governing functions in 10 months. Such rapid coming and going had less of disturbing effect on the public business than it might in other circumstances, for Swope and Tugwell held much the same ideas of policy, and both made their first acquaintance with the Island before taking the oath.

Tugwell in special had chances to look into Puerto Rican affairs at several points before becoming Governor. Early in the year he served as

chairman of a commission sent by the Secretary of the Interior to investigate Puerto Rican landholding and utilization of land. At the conclusion of this inquiry he was quoted in the press as expressing views likely to have a good welcome among the members of the Popular Party; that Puerto Rico's land act of 1941 sought to carry out just what Congress's resolution of 1900 had required, and that it would be fair for Puerto Rico to look to Federal financing toward paying for land expropriated. Soon Tugwell was nominated, July 30, by President Roosevelt for Chancellor of the University of Puerto Rico; and though Resident Commissioner Pagan, one of the Coalition party, criticized the appointment of an outsider to rule the Island's intellectual culture, Muñoz Marín, head of the dominant Popular party and chief agitator for redistribution of land, gave the nomination quite sufficient backing. Tugwell spent several weeks as Chancellor, and then the President appointed him Governor, issuing an order at the same time to permit Tugwell to hold both this new post and the Chancellorship at the same time. The special rule in Tugwell's favor was not everywhere well received by Puerto Ricans. Tugwell, taking office as Governor, September 19, sent in his resignation as Chancellor.

Expropriation and Landholders. The passage of the Land Authority Act, already mentioned under Legislation, opened up possibility of most extensive change in the social fabric of Puerto Rico and in its economic condition. The bigger landlords wanted for their holdings more than the Government offered. They took the course of applying to the U.S. Court, in some instances, for injunctions against the application of the law. One such applicant was the firm of Luce and Company, owning 24,700 acres and leasing 17,900 more, on which it reportedly operated in connection with the Central Aguirre. Another was Russell and Company, owning 21,000 acres on which cane was grown for the South Puerto Rico Sugar Company. Both these litigants started suit shortly before July 12, when the act went into force. The litigation, still running at the end of the year, delayed the operation of the new Land Authority.

Draft Versus Nationalists. The Nationalist party kept up its abstention from the doings of the Territorial Government. Refusing in general to acknowledge the authority of the United States in Puerto Rico, its leaders offered nonviolent but agitative opposition to the United States' drafting men on the Island for service in the U.S. forces. A small number of Nationalists who had refused to register under the draft law in November, 1940, were arrested and ten of these were convicted in February. R. Medina Ramirez and R. Lopez Rosas, officials of the party, prosecuted for having issued a proclamation urging Puerto Rican young men not to register, were found guilty of conspiracy to prevent the operation of the draft act, and convicted to two years' imprisonment and a period of probation. The period of probation required in Federal sentencing of Nationalists often led to their longer confinement, for other Nationalists imprisoned by the United States had from time to time refused or failed to observe the conditions of parole and had been remanded to prison. In the same way, Pedro Albizu Campos, head of the Nationalists, refused in November to pledge observance of the conditions of parole and was put back in prison for 19 months more.

Among the people in general, however, few gave evidence of sharing the indignation of the Nationalists at compulsory service under the American

flag. The pay under that flag, as compared with even the somewhat augmented rate of wages in their own island during a booming year, appeared good enough to remove from the draft the flavor of compulsion. About 3,600 of the original quota of 9,600 called for service had volunteered.

Federal Defenses in Puerto Rico. In addition to continuing work started earlier, the U.S. Navy undertook in 1941 a plan to develop a naval base on the island of Vieques, lying off the eastern end of Puerto Rico and forming part of the latter's territory. Intended expenditure there was reported in February as \$35,000,000; in June at \$42,500,000. A great dry dock was to be included. The position of Vieques was reported to have been deemed so favorable for naval operations as to find preference among two or three other West Indian sites that had been studied as possible sites for a primary naval base in the eastern Caribbean. The Navy announced, November 14, that it was taking immediate possession of 10,208 acres on Vieques and posting \$403,326 to assure payment therefor.

The Federal order to stop the movement of European foreigners' assets created trouble in Puerto Rico toward the end of June. It appeared that Spanish firms, some partly Americanized, did a great part of the mercantile business—nine-tenths of it, by one report. The effort to suspend the movement of their assets under such conditions hindered the course of trade on the Island so much that the U.S. Government granted temporary licenses to enable the merchants in Puerto Rico to set matters in order.

See BIRTH CONTROL, LABOR LEGISLATION.

PULITZER PRIZES. A series of annual awards established in 1915 by the will of Joseph Pulitzer, publisher of the *New York World*. On May 5, 1941, the following awards were made by the Trustees of Columbia University on the recommendation of the Advisory Board of the Graduate School of Journalism:

Prizes in Journalism: (1) For the most disinterested and meritorious public service rendered by an American newspaper during the year, a gold medal costing \$500: *St. Louis (Mo.) Post-Dispatch* for its successful campaign against the city smoke nuisance. (2) In place of an individual Pulitzer Prize for foreign correspondence, the Trustees approved the recommendation of the Advisory Board that a bronze plaque or scroll be designed and executed to recognize and symbolize the public services and the individual achievements of American news reporters in the war zones of Europe, Asia, and Africa from the beginning of the present war. (3) For distinguished editorial writing (\$500): Reuben Maury of the *Daily News* (New York, N.Y.). (4) For a distinguished example of a reporter's work (\$1,000): Westbrook Pegler of the *New York World-Telegram* for his articles on scandals in the ranks of organized labor, which led to the exposure and conviction of George Scalise. (5) For a distinguished example of a cartoonist's work published in an American newspaper (\$500): Jacob Burck of *The Times* (Chicago, Ill.), for "If I Should Die before I Wake," published June 2, 1940. (6) Special citation to *The New York Times* for the public educational value of its foreign news report.

Prizes in Letters: (1) For a distinguished novel by an American author, preferably dealing with American life (\$1,000): No award. (No explanation was made by the Advisory Board for its failure to recommend a novel for the prize.) (2) For the original American play, performed in New York, which shall represent in marked fashion the educational

value and power of the stage, preferably dealing with American life (\$1,000): *There Shall Be No Night*, by Robert E. Sherwood. (3) For a distinguished book of the year upon the history of the United States (\$1,000): *The Atlantic Migration*, by Marcus Lee Hansen (Harvard University Press). (4) For a distinguished American biography (\$1,000): *Jonathan Edwards*, by Ola Elizabeth Winslow (The Macmillan Company). (5) For a distinguished volume of verse (\$1,000): *Sunderland Capture*, by Leonard Bacon (Harper and Brothers).

PULMONARY EMBOLISM. See MEDICINE AND SURGERY.

PULP. See PAPER AND PULP.

PURCHASES DIVISION. See PRODUCTION MANAGEMENT, OFFICE OF.

PURCHASING AGENTS. See MARKETING.

PWA. See PUBLIC WORKS ADMINISTRATION.

QATAR. See under ARABIA.

QUAKERS. See FRIENDS.

QUARANTINE. See PUBLIC HEALTH SERVICE. For PLANT QUARANTINE, see ENTOMOLOGY, ECONOMIC.

QUEBEC. A province in eastern Canada. Area, 594,534 square miles, including 71,000 square miles of fresh water. Population (1941 census), 3,319,640, compared with (1931 census) 2,874,774. Vital statistics (1940): 83,857 living births, 32,799 deaths, 35,069 marriages. Chief cities (1941 census): Quebec, the capital (147,002), Montreal (882,398), Verdun (65,927), Three Rivers (41,732), Sherbrooke (35,501), Hull (32,474), Outremont (28,621), Westmount (24,123). Education (1938-39): 718,617 students enrolled in schools and colleges.

Production. The gross value of agricultural production in 1940 was \$213,116,000 (field crops \$89,531,000, dairy products \$59,472,000, farm animals \$34,941,000, poultry products \$10,929,000, fruits and vegetables \$10,094,000, maple products \$3,295,000, tobacco \$1,680,000, fiber flax \$1,159,000, fur farming \$1,036,000). Oats 46,872,000 bu. (44,290,000 in 1940), barley 3,762,000 bu. (3,888,000), buckwheat 1,777,000 bu. (2,144,000), mixed grains 5,027,000 bu. (4,502,000), potatoes 525,100 tons (656,250), roots 303,000 tons (298,750), hay 3,836,000 tons (5,280,000), fodder corn 581,000 tons (552,000) were the main field crops in 1941. Livestock (1940): 1,794,900 cattle (including 1,028,000 milk cows), 936,900 hogs, 648,200 sheep, 304,700 horses, 8,660,700 poultry. Furs (1938-39): 417,632 pelts worth \$2,230,280. Forest products (1939) were valued at \$56,140,000. Fisheries (1940): 51,485 tons worth \$2,002,000 as marketed.

Mineral output (1940 preliminary report) was valued at \$85,621,000 (\$77,335,998 in 1939), including gold (1,019,175 fine oz.), silver (1,328,864 oz.), asbestos (345,600 tons), cement (3,850,900 bbl.), lime (231,800 tons), copper, zinc, selenium, tellurium, sulphur, and clay products. Manufacturing (1939): 8,373 factories, 220,321 employees, \$223,757,767 for salaries and wages, \$470,385,279 net value of products.

Government. Finance (year ended June 30, 1940): \$59,153,857 for revenue and \$66,441,201 for expenditure; net funded debt, \$339,804,681. The executive authority is vested in a lieutenant governor who is advised by a ministry of the legislature. There are 24 members (appointed for life) in the legislative council, and 86 members (elected by male and female suffrage) in the legislative assembly (70 Liberals, 15 Union Nationale, 1 Independent; elected Oct. 25, 1939). Twenty-four senators (appointed for life) and 65 elected commoners

represent Quebec in the Federal parliament at Ottawa. Lieutenant Governor, Maj. Gen. Sir Eugène Fiset (appointed Dec. 30, 1939); Premier, Adélard Godbout (Liberal; appointed Nov. 8, 1939).

History. The Premier, Adélard Godbout, on May 16, 1941, issued a statement in reply to certain critical articles that had appeared in the press of the United States concerning the attitude of French Canadians to the war. Among other things, he said ". . . that French Canadians face the study and solution of Canadian questions of Canada and its future from a thorough Canadian angle. And it is precisely because the present war jeopardizes the civilization and democratic institutions . . . that French Canadians from one end of the country to the other, have arisen as one man against neopaganism, Hitlerism, and all other forms of tyranny that flourish in totalitarian countries. . . . We are striving toward the triumph of justice against barbarism, of liberty against totalitarianism. . . . We French Canadians earnestly desire that Canada present before the enemy a front united and solid."

A forest fire raging for seven days over 2,000 square miles in the Chicoutimi and Lake St. John districts was brought under control on June 7, 1941, by a 24-hour rain and the efforts of some 4,000 fire fighters. See CANADA.

QUEENSLAND. See AUSTRALIA under *Area and Population*.

QUICKSILVER. See GEOLOGICAL SURVEY.

QUISLING. See NORWAY.

RACING. Three things—Whirlaway, a three-year-old colt which won the hallowed Triple Crown; Alsab, an amazing two-year-old, stamped as the best in years; and money—were the standouts of the 1941 racing season.

Whirlaway, a little horse with a long tail, won the Kentucky Derby, the Preakness, and the Belmont, the three classic romps constituting the Triple Crown. And this horse, owned by Warren Wright, baking-soda magnate, earned \$272,386, top for the year, but still far short of the one-year total taken down in 1930 by Gallant Fox of \$308,275. But late in the year Whirlaway, in training from January in Florida, started to tire, and was beaten by War Relic in Massachusetts and then trounced by the former plater, Market Wise, in the lengthy New York Handicap at Belmont Park, a two-mile affair.

Alsab, named after his Chicago owner, Al Sabbath, entered the scene late in the summer and amazed everyone by his speed. He went East to beat Requested in a match race, and to set a Belmont track record, and later set a mile mark for two-year-olds when he won the classic Champagne Stakes in 1:35 $\frac{1}{2}$ under 122 pounds, something unheard of in other years and shattering Twenty Grand's standard at the same age and distance.

There was so much money shoved through mutuel machines through the country that it was a field day for track owners as well as state tax commissioners. In 1,710 days of betting in the sixteen states which countenance racing, \$517,382,107 was wagered, more than a hundred million dollars over the previous year. As expected, New York State led with a total bet of \$133,982,574 and a state "take" of more than \$7,500,000.

The trotting game was accelerated by mutuel machines in New York and such ventures as the Roosevelt Raceway, erstwhile automobile pretzel, on Long Island, and another track at Saratoga served valiantly. The game prospered throughout the country, and there were six horses who went the classic mile in two minutes or better in the

year. These were Bill Gallon, 1:59 $\frac{1}{2}$, Hambletonian winner; Nibble Hanover, 1:58 $\frac{3}{4}$; His Excellency, 1:59 $\frac{1}{4}$; Milestone, 2:00; Earl's Moody Guy, 2:00, and Spencer Scott, 1:58 1:57 $\frac{1}{4}$. Spencer Scott finished back of Nibble Hanover in Maine when that stallion went two amazing heats in 1:58 $\frac{3}{4}$ and 1:59 to set a world's record.

As victor in the rich Hambletonian, Bill Gallon was the leading money-winning trotter of the season, with more than \$30,000 to his credit, although that was the slowest of the sixteen races in the series. Later Bill Gallon lowered his record from 2:01 to 1:59 $\frac{1}{2}$ at Lexington in a race against time. He didn't start until late July and was twice beaten in his six races. The United States Trotting Association estimated that more than \$2,000,000 was distributed in purses for trotting and pacing races in 1941. See RADIO PROGRAMS.

CASWELL ADAMS.

RACKETEERING. See LABOR CONDITIONS.

RADIO. Preliminary estimates placed the 1941 output of radio receivers at 13,800,000 sets and the output of radio tubes at 100,000,000—new records for the radio manufacturing industry. In fact, the number of receivers for the year nearly equaled the 15,000,000 figure which represents the industry's estimate of the cumulative grand total of all radio receivers commercially built prior to 1930. By the end of the year military demands on the industry, coupled with the increasingly severe restrictions of key materials ranging from copper to plastics, was affecting the industry's ability to meet a consumer demand stimulated by interest in war news and by increased income of labor. Diversion of engineering effort to war needs was expected to "freeze" the basic design of circuits and equipment for the duration of the war.

As public purchasing power increased, the demand for the more expensive consoles and radio-phonograph combinations increased. Record-players came back strongly into favor and a corresponding all-time high record in the production of phonograph records was set, with an estimated total of 111,000,000. Combination consoles in many instances included receivers for both amplitude- and frequency-modulated radio and automatic record-player and changer. A noteworthy development of portable radio receivers was a unit powered by a nonspillable airplane-type storage battery instead of dry cells. This set also could be plugged into an ordinary 110-volt a-c house-lighting circuit and played as a power set while recharging its own battery; it could be operated similarly on a 6-volt d-c automobile circuit.

Frequency modulation, established in 1940 (see 1940 YEAR BOOK, p. 642) has grown steadily. As of Dec. 9, 1941, a total of twenty-two FM transmitting stations were operating on daily schedules, forty stations approved by the FCC were in various stages of construction, and some fifty applications were pending before the FCC. Manufacturers operating under Armstrong licenses, and at least two nonlicensed manufacturers, were turning out increased numbers and types of FM receivers. A low-power (25-watt) FM transmitter was brought out for point-to-point transmission of high-fidelity FM broadcast and television aural programs, to take the place of wire lines, for example, between pick-up studio and broadcasting station. Standardized FM equipment has been developed for the use of police departments and utilities in maintaining communication with patrol cars under conditions that would preclude the reception of AM signals. In

Toronto such equipment is being used to facilitate the control and emergency dispatching of street cars under difficult traffic conditions.

Research in radio and related electronic fields continues to give mankind many new and valuable tools. Notable among these is the electron microscope, which has revealed objects far beyond the range of optical microscopes. See CHEMISTRY, PURE.

Notable in broadcast developments is the 50,000-watt station built at a cost of \$600,000 by Columbia Broadcasting Company for its radio station WABC. Novel features of the station are the design of its single 410-foot steel tower, and its location on a tiny half-acre island built up out of Long Island Sound about a mile off New Rochelle, N.Y.

Point-to-point two-way multiple radio communication, pioneered for construction projects on the San Francisco Bay Bridge, was used to enormous advantage to coordinate widely scattered operations on many big wartime manufacturing-plant construction projects during 1941, and probably will be retained on those projects to facilitate the operation of the plants. Ordinary police-type equipment is used.

Television. Television officially "arrived" as of July 1, 1941, when commercial operation was authorized by FCC. It was something of an anticlimactic arrival, however, and one fraught with discouraging difficulties. After the initial "limited commercialization" which got off to a fair start in the spring of

1940 (subsequently rescinded by FCC) all television stations were required to shift to new frequency-channels as the result of a general reallocation of channels required to accommodate FM broadcast stations. This required a shutdown of television broadcasting and also required technical changes not only in station equipment, but in every television receiver in operation and in dealers' stocks.

Defense demands upon available technicians and priority controls of strategic materials further plagued the infant industry. By year-end, however, 8 telecasting stations had been granted commercial licenses and 34 had been granted experimental licenses. One station was operating on a regular commercial schedule and at least three others were offering fairly regular programs. Of the experimental stations, 11 were operating.

The National Television Systems Committee (see 1940 YEAR BOOK) established by the Radio Manufacturers Association in cooperation with the FCC succeeded in drawing up a set of television standards that were acceptable to all parties concerned as a mutual compromise. These were adopted by FCC early in 1941, and now form the basis for further television developments—in color as well as in black-and-white. This successful cooperative venture was regarded by observers as being a noteworthy milestone along the long and troubled road of relations between government and industry.

For programs and awards, see the separate article

UNITED STATES RADIO BROADCAST STATIONS HAVING POWER OF 50 KW (Sept. 1, 1941)

State	City	Call Letters	Licensee	Frequency (kc)
California	Los Angeles	KFI	Earle C. Anthony, Inc.	640
California	Los Angeles	KNX	Columbia Broadcasting System, Inc.	1,070
California	San Francisco	KPO	National Broadcasting Co., Inc.	680
Colorado	Denver	KOA	National Broadcasting Co., Inc.	850
Connecticut	Hartford	WTIC	Travelers Broadcasting Service Corp.	1,080
District of Columbia	Washington	WJSV	Columbia Broadcasting System, Inc.	1,500
Georgia	Atlanta	WSB	Atlanta Journal Co.	750
Illinois	Chicago	WBBM	Columbia Broadcasting System, Inc.	780
Illinois	Chicago	WENR	National Broadcasting Co., Inc.	890
Illinois	Chicago	WGN	WGN, Inc.	720
Illinois	Chicago	WLS	Agricultural Broadcasting Co.	890
Illinois	Chicago	WMAQ	National Broadcasting Co., Inc.	670
Iowa	Des Moines	WHO	Central Broadcasting Co.	1,040
Kentucky	Louisville	WHAS	Courier-Journal and Louisville Times Co.	840
Louisiana	New Orleans	WWL	Loyola University	870
Louisiana	Shreveport	KWKH	International Broadcasting Corp.	1,130
Maryland	Baltimore	WBAL	The WBAL Broadcasting Co.*	1,090
Massachusetts	Boston	WBZ	Westinghouse Radio Stations, Inc.	1,030
Michigan	Detroit	WJR	WJR, The Goodwill Station	760
Minnesota	Minneapolis	WCCO	Columbia Broadcasting System, Inc.	830
Minnesota	St. Paul	KSTP	KSTP, Inc.	1,500
Missouri	St. Louis	KMOX	Columbia Broadcasting System, Inc.	1,120
New Mexico	Albuquerque	KOB	Albuquerque Broadcasting Co.*	1,030
New York	Buffalo	WKBW	Buffalo Broadcasting Corp.*	1,520
New York	New York	WABC	Columbia Broadcasting System, Inc.	880
New York	New York	WEAF	National Broadcasting Co., Inc.	680
New York	New York	WEN	Marcus Loew Booking Agency*	1,050
New York	New York	WINS	Hearst Radio, Inc.*	1,000
New York	New York	WJZ	National Broadcasting Co., Inc.	770
New York	New York	WOR	Bamberger Broadcasting Service, Inc.	710
New York	Rochester	WEAM	Stromberg-Carlson Telephone Mfg. Co.	1,180
New York	Schenectady	WGY	General Electric Co.	810
North Carolina	Charlotte	WPT	Columbia Broadcasting System, Inc.	1,110
North Carolina	Raleigh	WPTF	WPTF Radio Co.	680
Ohio	Cincinnati	WKCY	L. B. Wilson, Inc.	1,530
Ohio	Cincinnati	WLW	The Crosley Corp.	700
Ohio	Cleveland	WTAM	National Broadcasting Co., Inc.	1,100
Oklahoma	Tulsa	KVOO	Southwestern Sales Corp.*	1,170
Pennsylvania	Philadelphia	KYW	Westinghouse Radio Stations, Inc.	1,060
Pennsylvania	Philadelphia	WCAU	WCAU Broadcasting Co.	1,210
Pennsylvania	Pittsburgh	KDKA	Westinghouse Radio Stations, Inc.	1,020
Tennessee	Nashville	WLAC	J. T. Ward, tr as WLAC Broadcasting Service*	1,510
Tennessee	Nashville	WSM	National Life & Accident Insurance Co.	650
Texas	Dallas	KRLD	KRLD Radio Corp.	1,080
Texas	Dallas	WFAA	A. H. Belo Corp.	820
Texas	Houston	KTRH	KTRH Broadcasting Co.*	740
Texas	Fort Worth	WBAP	Cartier Publications, Inc.	820
Texas	San Antonio	WOAI	Southland Industries, Inc.	1,200
Utah	Salt Lake City	KSL	Radio Service Corp. of Utah	1,180
Virginia	Richmond	WRVA	Larus & Brother Co., Inc.	1,140
Washington	Seattle	KIRO	Queen City Broadcasting Co.	710
West Virginia	Wheeling	WWVA	West Virginia Broadcasting Corp.*	1,170

* Construction permit authorized for 50 KW transmitter

COMMERCIAL TELEVISION BROADCAST STATIONS (July 25, 1941)

Licensee and Location	Call Letters	Frequency (kc)	ESR ^b
Columbia Broadcasting System, Inc., New York, N.Y.	WCBW	60,000-66,000 (Channel 2)	2,400*
General Electric Company, Schenectady, N.Y.	WRGB	66,000-72,000 (Channel 3)	3,100*
National Broadcasting Company, Inc., New York, N.Y.	WNBT	50,000-56,000 (Channel 1)	1,800

* Construction permit only ^b Effective signal radiated.

HIGH FREQUENCY BROADCAST STATIONS (August 1, 1941)
[Construction Permit Only]

Licensee and Location	Call Letters	Frequency (kc)	Service Area ^c
American Broadcasting Corporation of Kentucky, Lexington, Ky.	W51SL	45,100	6,300
Edwin H. Armstrong, New York, N.Y.	W31NY	43,100	15,600
Bamberger Broadcasting Service, Inc., Newark, N.J.	W71NY	47,100	8,500
Baton Rouge Broadcasting Co., Inc., Baton Rouge, La.	W45BR	44,500	8,100
John Lord Booth, Detroit, Mich.	W49D	44,900	6,800
Central N.Y. Broadcasting Corp., Syracuse, N.Y.	W63SY	46,300	6,800
Capitol Broadcasting Company, Inc., Schenectady, N.Y.	W47A	44,700	6,600
City of New York, Municipal Broadcasting System, New York, N.Y.	W35NY	43,500	3,900
Columbia Broadcasting System, Inc., Chicago, Ill.	W67C	46,700	10,800
Columbia Broadcasting System, Inc., Hollywood, Calif.	K31LA	43,100	38,000
Columbia Broadcasting System, Inc., New York, N.Y.	W67NY	46,700	8,500
Evansville On the Air, Inc., Evansville, Ind.	W45V	44,500	8,400
The Evening News Association, Detroit, Mich.	W45D	44,500	6,800
William G. H. Finch, New York, N.Y.	W55NY	45,500	8,500
Frequency Broadcasting Corporation, Brooklyn, N.Y.	W99NY	49,900	8,500
General Electric Company, Schenectady, N.Y.	W57A	45,700	6,600
Gordon Gray, Winston-Salem, N.C.	W41MM	44,100	69,400
Interstate Broadcasting Company, Inc., New York, N.Y.	W59NY	45,900	8,500
Wylie B. Jones Advertising Agency, Binghamton, N.Y.	W49BN	44,900	6,500
The Journal Company (The Milwaukee Journal), Milwaukee, Wis.	W55M	45,500	8,500
Don Lee Broadcasting System, Los Angeles, Calif.	K45LA	44,500	7,000
Marcus Loew Booking Agency, New York, N.Y.	W63NY	46,300	8,500
Metro-Goldwyn-Mayer Studios, Inc., Los Angeles, Calif.	K61LA	46,100	7,000
Metropolitan Television, Inc., New York, N.Y.	W75NY	47,500	8,500
Moody Bible Institute of Chicago, Chicago, Ill.	W75C	47,500	10,800
Muzak Corporation, New York, N.Y.	W47NY	44,700	8,500
National Broadcasting Company, Inc., New York, N.Y.	W51NY	45,100	8,500
National Broadcasting Company, Inc., Chicago, Ill.	W63C	46,300	10,800
The National Life and Accident Insurance Co., Nashville, Tenn.	W47NV	44,700	16,000*
Pennsylvania Broadcasting Company, Philadelphia, Pa.	W49PH	44,900	9,300
Radio Service Corporation of Utah, Salt Lake City, Utah	K47SL	44,700	700
Rockford Broadcasters, Inc., Rockford, Ill.	W71RF	47,100	3,900
St. Louis University, St. Louis, Mo.	K51L	45,100	13,000
South Bend Tribune, South Bend, Ind.	W71SB	47,100	4,300
Standard Broadcasting Company, Los Angeles, Calif.	K53LA	45,300	7,000
Stromberg-Carlson Telephone Mfg. Co., Rochester, N.Y.	W51R	45,100	3,200
The Travelers Broadcasting Service Corp., Hartford, Conn.	W53H	45,300	6,100
Walker & Downing Radio Corporation, Pittsburgh, Pa.	W47P	44,700	8,400
WBNS, Incorporated, Columbus, Ohio	W45CM	44,500	12,400
WCAU Broadcasting Company, Philadelphia, Pa.	W69PH	46,900	9,300
WDRC, Inc., Hartford, Conn.	W65H	46,500	6,100
Westinghouse Radio Stations, Inc., Springfield, Mass.	W81SP	48,100	2,500
Westinghouse Radio Stations, Inc., Boston, Mass.	W67B	46,700	6,700
Westinghouse Radio Stations, Inc., Fort Wayne, Ind.	W49FW	44,900	6,100
Westinghouse Radio Stations, Inc., Philadelphia, Pa.	W57PH	45,700	9,300
Westinghouse Radio Stations, Inc., Pittsburgh, Pa.	W75P	47,500	8,400
WFIL Broadcasting Co., Philadelphia, Pa.	W53PH	45,300	9,300
WGN, Inc., Chicago, Ill.	W59C	45,900	10,800
WJIM, Inc., Lansing, Mich.	W77XL	47,700	3,800
WJJD, Inc., Chicago, Ill.	W47C	44,700	10,800
The Yankee Network, Inc., Boston, Mass.	W39B	43,900	31,000
The Yankee Network, Inc., Paxton, Mass.	W43B	44,300	1,800
Zenth Radio Corp., Chicago, Ill.	W51C	45,100	10,800

* Construction permit covered by license, May, 1941. ^b Special temporary authorization only. ^c Square miles.

on RADIO PROGRAMS. See also DEFENSE COMMUNICATIONS BOARD; NATIONAL BUREAU OF STANDARDS.

The tables (p. 553-554) list the larger broadcasting stations, the television broadcasting stations, and commercial high frequency stations of the United States. For an account of the number of stations licensed and other events of the year, see FEDERAL COMMUNICATIONS COMMISSION.
G. ROSS HENNINGER.

RADIOACTIVE SUBSTANCES. See PHYSICS.
RADIO BEACONS, RADIO DIRECTION FINDERS. See COAST GUARD, U.S.
RADIOGRAPHY. See X-RAYS.
RADIOPHONE SERVICE. See TELEPHONY.

RADIO PROGRAMS. Never in radio's history has there been a development of such significance as in the latter part of 1941. In that somber period it was demonstrated that the potentials of the medium had not been approached even remotely in previous years, that the leading commercial programs—at

least on the basis of past ratings by the Cooperative Analysis of Broadcasting¹—were no longer the yardstick of maximum audience size.

Specifically, the addresses of President Roosevelt and Prime Minister Winston Churchill created audiences of such vast dimensions that the most brilliant ratings of years gone by were not only outstripped, but indeed doubled or more. This elasticity of the audience-potential was even more remarkably demonstrated when the President broke all audience records two days hand running. On Monday noon, December 8, the President's appeal for declaration of war against Japan attained a rating of 65.7 per cent. The next evening, his speech at 10 p.m. similarly shattered all nighttime listening levels with a rating of 83 per cent.

For the sake of comparison, these superlative

¹ A 'rating' is a percentage of families owning one or more radio sets. To illustrate: If, out of each one hundred families owning radio sets who are interviewed in the area covered by a given program, 20 families report that they heard it, then the rating which is published by the O.A.B. is 20. The number of stations (size of network) does not affect the size of the rating.

figures may be gauged against the President's Charlottesville speech of June 10, 1940 (7:15 p.m.—all four networks), in which he denounced Italy's entrance into the war. That memorable address rated 45.5 per cent—the highest mark, up to that time, recorded by the C.A.B. for a speech of any kind. Other Presidential addresses broadcast over all the major networks, throughout 1941 likewise brought inordinately high audiences: March 15 (Press Correspondent's Dinner), 9:30 p.m., 47.0 per cent; April 30, 10:30 p.m., 26.7 per cent; September 11 (Greer Incident), 10:00 p.m., 72.5 per cent; November 6 (Navy Day Address), 3:00 p.m., 20.0 per cent; November 11 (Armistice Day Ceremonies), 11:30 a.m., 28.4 per cent; December 15 (Bill of Rights Program), 10 to 11 p.m., 63.3 per cent.

A relative newcomer to the ranks of radio during 1941 was Prime Minister Winston Churchill. On four separate occasions his speeches were rated by the C.A.B. The first one occurred at 3 p.m. on Sunday, February 9, and bore a rating of 23.7 per cent. At the same time of day, and the same day of the week, on June 22, he attained a rating of 16.5 per cent. On Sunday, August 24, at 4 p.m., he registered 26.1 per cent. With his visit to the United States, his audience jumped immensely. His most recently rated address—at noon on Friday, December 26—showed a mark of 44.7 per cent.

As of December, 1941, the 20 leading evening programs, listed in order of their ratings, were:

- Chase & Sanborn Program—Edgar Bergen
- Jack Benny
- Fibber McGee & Molly
- Lux Radio Theatre
- The Aldrich Family
- Pepsodent Program—Bob Hope
- Maxwell House Coffee Time
- Walter Winchell
- Kate Smith Hour
- Kraft Music Hall
- Fitch Bandwagon
- One Man's Family
- Major Bowes Amateur Hour
- Time to Smile—Eddie Cantor
- Kay Kyser
- Lowell Thomas
- Texaco Star Theater—Fred Allen
- Mr. District Attorney
- Burns & Allen
- Red Skelton

As against the year before, there was very little fluctuation in this list. Only four newcomers appeared: *Lowell Thomas*, *Mr. District Attorney*, *Burns & Allen*, and *Red Skelton*. The 1940 quartet thus displaced included *Dr. Christian*, *Rudy Vallee*, *Hit Parade*, and *Big Town*.

In Table I the 10 evening leaders for the standard-time months of '41 are noted by rank. Changes in position are confined to very limited movements.

I—MONTHLY RANKING OF THE TEN LEADERS FOR STANDARD-TIME MONTHS, 1941

	For the									
	Period	Jan.	Feb.	Mar.	April	Oct	Nov.	Dec		
Jack Benny	1	1	1	1	1	4	2	2	2	2
Chase & Sanborn	2	2	2	2	3	2	1	1		
Fibber McGee & Molly	3	3	5	5	2	1	3	3		
Lux Radio Theatre	4	4	3	4	4	3	5	4		
Aldrich Family	5	6	4	3	5	5	4	5		
Bob Hope	6	5	6	6	6	6	6	6		
Maxwell House	7	9	8	9	7	7	7	7		
Major Bowes	8	7	7	7	11	8	9	13		
Kate Smith Hour	9	8	9	8	8	9	13	9		
One Man's Family	10	13	11	12	10	11	8	12		

On the other hand, during the daylight-saving time period (Table II) fluctuations of a fairly high order appeared. In consideration of the fact that summer schedules undergo many changes, and leading winter programs are at times absent, such ups-and-downs are not unexpected.

II—MONTHLY RANKING OF THE TEN LEADERS FOR DAYLIGHT-SAVING MONTHS, 1941

	For the						
	Period	May	June	July	Aug	Sept.	
Chase & Sanborn	1	4	3	a	a	a	3
Lux Radio Theatre	2	6	2	a	a	a	1
Aldrich Family	3	5	4	a	a	a	2
Maxwell House	4	9	5	a	a	a	10
Walter Winchell	5	10	6	3	a	a	8
Kraft Music Hall	6	13	7	1	1	1	9
Kay Kyser	7	7	17	2	2	2	4
One Man's Family	8	11	8	4	3	5	5
Eddie Cantor	9	14	9	a	a	a	11
Mr. District Attorney	10	15	12	10	9	7	7

* Off the air. Only programs broadcast three or more months out of the five summer months were used for the purpose of this analysis.

During the daytime, the network leaders as of December, 1941, in order of their ratings, were:

- Life Can Be Beautiful
- Kate Smith Speaks
- The Woman in White
- Right to Happiness
- Romance of Helen Trent
- Our Gal Sunday
- The Guiding Light
- Ma Perkins
- Road of Life
- Mary Marlin
- Vic and Sade

It will be seen that it takes 11 programs to make a list of 10 leaders this year, due to a tie for tenth position. Eight of these 10 programs were also in the list of last year's leaders. The three newcomers are—*Kate Smith Speaks*, *Romance of Helen Trent*, and *Guiding Light*. Since the list last year required only 10 programs to fill 10 positions, there are now only two displacements. *Pepper Young's Family* (currently in 16th position) and *Stella Dallas* (in 18th place) are the two dropped in favor of newcomers.

While the daytime schedule, like the evening list, seems to suggest a lack of change, the stability is not so great. The foregoing list really includes only the Monday-through-Friday broadcasts. If Sunday programs are included, three changes occur—*Pause That Refreshes on the Air*, and *William L. Shirer* (both of which out-rank any of the weekday shows), and *Prudential Family Hour*. By way of contrast, the 1940 weekday programs, in every instance, were able to out-rate the weekend broadcasts.

Although winter and summer network evening schedules exhibit many changes and substitutions in individual programs, the proportion of time devoted to the various program types nonetheless remains about the same. When the winter-season evening program types for 1940-41 are compared with the types prevalent in 1939-40, a marked swing away from the expensive variety shows to drama and audience-participation is found. During 1940, the level of the network audience reached a new zenith. As previously mentioned, during several special periods in 1941 these 1940 high marks were virtually doubled. On the other hand, from the standpoint of seasonal averages, nighttime set-in-use, on the basis of three months ending Dec. 31, 1941, was about 8 per cent less than for the comparable 1940 period, while daytime listening dropped 11 per cent during the same interval. Naturally, this tilt in the listening plane was reflected in the distribution of programs ratings (Table III). This means that there was a drop-off in the upper strata and a concomitant increase in the number of programs at the lower end of the scale.

Keeping in mind the fact that normal network-program ratings cover only metropolitan set-owners, although 43 per cent of the United States pop-

III—DISTRIBUTION OF SPONSORED NETWORK EVENING PROGRAMS ACCORDING TO RATINGS—DECEMBER

Rating (% of Set-Owners)	1941		1940	
	No of Programs	% of Total	No of Programs	% of Total
40% and over	0	0	1	0.9
35.0-39.9	2	1.8	1	0.9
30.0-34.9	3	2.6	3	2.7
25.0-29.9	2	1.8	4	3.6
20.0-24.9	6	5.3	7	6.3
15.0-19.9	14	12.4	14	13.1
10.0-14.9	32	28.3	41	38.2
5.0-9.9	34	30.1	30	28.0
0.0-4.9	20	17.7	7	6.3
Total	113	100.0	108	100.0

ulation is still rural, the C.A.B., in the spring of 1941, made its fourth study in rural sections and small towns of the basic area. About 75,000 interviews were made and the results show: (1) Greater daytime set-use in rural areas than in metropolitan areas. (2) After 8 p.m., on weekdays, however, city dwellers use their sets more than small town and rural people. Similarly, daytime commercial programs, as a whole, enjoy higher ratings in rural communities than in big cities, but nighttime programs exhibit the contrary tendency. The average daytime rating is 6.2 in rural areas as against 5.5 in big cities. At night, the average program rating in rural areas is 10.6, whereas in cities the average program is rated at 12.8.

An examination of the 10 highest-rating evening programs in rural areas and cities, respectively, shows that 8 programs are common to both lists. The two programs preferred by the rural audience, but not by its big-city counterpart, are *Lowell Thomas* and *National Barn Dance*. Conversely, the city audience prefers two programs which do not appear on the rural "first 10" list. They are *Bob Hope Program* and *Kate Smith Hour*.

Some network evening programs show an especially strong preference among rural set-owners as compared with metropolitan radio homes. This group includes, in part: *Plantation Party*, *Lowell Thomas*, *Uncle Jim's Question Bee*, *National Barn Dance*, *Easy Aces*, *Death Valley Days*, *Mr. Keen Tracer of Lost Persons*, *Battle of the Sexes*. Likewise, city set-owners have certain favorites which do not evoke nearly so high a response among the

RANKING OF THE 10 LEADING EVENING PROGRAMS IN RURAL AREAS COMPARED WITH THEIR CITY RATINGS

	Basic Area	
	Rural Rank	Cities Rank
Aldrich Family	1	3
Lowell Thomas	2	1.5
Jell-O Program—Jack Benny	3	1
Chase & Sanborn Program	4	2
Fibber McGee & Molly	5	5
Truth or Consequences	6	10
Major Bowes Amateur Hour	7	7
National Barn Dance	8	3.5
Maxwell House Coffee Time	9	8
Lux Radio Theatre	10	4

RANKING OF THE 10 LEADING EVENING PROGRAMS IN CITIES COMPARED WITH THEIR RURAL RATINGS

	Basic Area	
	Cities Rank	Rural Rank
Jell-O Program—Jack Benny	1	3
Chase & Sanborn Program	2	4
Aldrich Family	3	1
Lux Radio Theatre	4	10
Fibber McGee & Molly	5	5
Bob Hope Program	6	12
Major Bowes Amateur Hour	7	7
Maxwell House Coffee Time	8	9
Kate Smith Hour	9	14
Truth or Consequences	10	6

rural listeners. On this list would be, among others: *Goodwill Hour*, *Guy Lombardo*, *Helen Hayes*, *Screen Guild Theatre*, *Take It or Leave It*, *Wayne King*, *Uncle Walter's Doghouse*, *Campbell Playhouse*, *Lux Radio Theatre*. Because of rural living habits, either one or both of these two groups of programs may possibly be influenced by time of broadcast.

Among the daytime leaders, there are only three which are common to both rural and big-city lists: *Ma Perkins*, *Pepper Young's Family*, *Mary Marlin*.

RANKING OF THE 10 LEADING DAYTIME PROGRAMS IN RURAL AREAS COMPARED WITH THEIR CITY RATINGS

	Basic Area	
	Rural Rank	Cities Rank
Ma Perkins	1	1
Pepper Young's Family	2	9
Tom Mix—Ralston Straight Shooter	2	50
Jack Armstrong	4	18
Stella Dallas	5	11
Guiding Light	6	14
Young Widder Brown	7	15
Vic and Sade	8	11
Light of the World	8	13
Mary Marlin	10	7

RANKING OF THE 10 LEADING DAYTIME PROGRAMS IN CITIES COMPARED WITH THEIR RURAL RATINGS

	Basic Area	
	Cities Rank	Rural Rank
Ma Perkins	1	1
Life Can Be Beautiful (C)	2	17
Our Gal Sunday	3	33
The Woman in White	4	13
Right to Happiness	5	14
Kate Smith Speaks	6	30
Romance of Helen Trent	7	37
Mary Marlin	7	10
Pepper Young's Family	9	2
Road of Life (R)	10	12

Aside from measuring the audiences of President Roosevelt and Prime Minister Winston Churchill (noted in the opening paragraphs of this article), the C.A.B. also evaluated a representative number of other special and newsworthy events. Among them were:

The Human Needs Mobilization program staged October 3. With President Roosevelt, Wendell Willkie, and the Aldrich Family as features, the broadcast rated 19.2%.

Wendell Willkie's address at 11 p.m. on Friday, June 6, was tabulated at 14.4%.

Queen Elizabeth, on Sunday, August 10 (4 p.m.) was tuned in by 10.5% of set-owners.

One rating was also made on Charles Lindbergh III's address of Friday, October 3, rated 6.5%.

As is customary, the C.A.B. in 1941 reported on all the regular sports, plus numerous athletic events of a special nature.

Kentucky Derby. The year's annual classic at Churchill Downs occurred on Saturday, May 3. It was reported as having been heard by 16.7% of set-owners. In 1940 the rating was 15.2%.

Baseball. During the baseball season, the C.A.B. again reported on listening to play-by-play broadcasts, both major and minor leagues, heard in the 33 C.A.B. cities.

Averaged from May through September, daytime baseball (7 days) listening stood at a level of 15.0%. The monthly figures are

May	15.6
June	14.6
July	15.1
August	13.6
September	15.7
Average	15.0

The season average for baseball listening, for the average weekday Monday through Friday inclusive, was 13.8.

In 1941, a notable increase in listening to the World's Series was recorded. The games this time

were played between Brooklyn and the New York Yankees on October 1, 2, 3, 4, 5, and 6. The average rating was 32.8 per cent as against 25.2 per cent the year before when Detroit and Cincinnati were the contenders. In both years the Mutual network carried the play-by-play description.

Football. The ratings for college football broadcasts were as follows.

Oct 18.	28 2
Nov 1	32 4
Nov. 15	34 9
Nov. 29	27 2

The foundation for the C.A.B. was laid by the radio committee of the Association of National Advertisers in January, 1929. As a result of the committee's discussion of a study made by Crossley, Inc., a number of leading advertisers employed that organization to make individual surveys. Later these were combined into a report for the Association of National Advertisers, and at the same time Crossley was requested to submit an outline for a cooperative investigation which would include "the checking of program popularity." The Association of National Advertisers appointed a special committee to work out the details. The field work was started by Crossley, Inc., on Mar. 1, 1930.

In 1934 the C.A.B. was reorganized, taking its present set-up as a mutual, nonprofit organization with a governing committee of six, three of whom are appointed by the Association of National Advertisers and three by the American Association of Advertising Agencies. This committee sets all policies—business, financial, and research. Crossley, Inc., is still employed to do the field and technical work. The C.A.B. is the official organization for rating radio programs. It is supported by leading advertisers, agencies, and networks on the basis of their respective stakes in radio.

Under the method used by the C.A.B., the listener need not remember the exact program name. He or she needs to give sufficient information about the program to enable the investigator by cross-checking station, time, or description of the program, to enter it on C.A.B. records as having been heard. This method has several outstanding advantages, such as speed, accuracy, economy. It obtains the answer to the vital question "Has the program made a conscious impression?"—a factor which the advertiser, to be successful, must know.

Fifty-two investigators, making calls at eight stated times each day, working simultaneously 168 days of the year in 33 major cities from coast to coast, completed 690,000 interviews based on more than 1,100,000 telephone calls. The geographical distribution of calls coincides with the distribution of radio sets, and calls are distributed by income groups in accordance with the distribution of radio-set ownership by income groups. Thus the criticism leveled at most telephone surveys, that they reach an undue proportion of persons in the upper income groups, has been eliminated as far as the C.A.B. is concerned. The results of these investigations are sent to subscribers in the form of 40 reports per year.

Leading advertisers and agencies use the C.A.B. reports to help them: (1) Determine the best day and hour to select whenever a choice of radio time is offered; (2) follow the popularity trend of various programs and types of programs and discover when a given program or type of program is worn out; (3) purchase talent advantageously by comparing the performers on different programs; (4) decide whether a given season should be included or dropped; (5) make comparisons between day-time and evening programs; (6) compare the dif-

ference in program audiences by sections of the country, population groups, income levels, etc.; (7) discern by study of the leaders and laggards what makes a good radio program; (8) check where the most important competition is and thus find the most desirable time to buy.

The C.A.B. provides within a fortnight the "box-office" on all sponsored network programs based on a comprehensive, nation-wide sample, regardless of the time of day or night program is broadcast.

Awards. A new set of radio prizes made its appearance on Mar. 29, 1941, when the George Foster Peabody Radio Awards were granted for the first time. These awards, authorized by the regents of the University System of Georgia, were designed as an annual event somewhat comparable to the Pulitzer Prizes awarded in journalism. The award to individuals, for the year 1940, went to Elmer Davis, C.B.S. news commentator, for his "terse, incisive, and impartial reporting of the news, day by day." The award to networks was granted to the Columbia Broadcasting System, with the notation that that system had broadcast 3,500 hours of public service programs during the year, giving 10,000 noncommercial broadcasts. The awards to large, medium-sized, and small stations went, respectively, to WLW of Cincinnati, WGAR of Cleveland, and KFRU of Columbia, Mo. Citations for special service were made also to: WSB, Atlanta; KNX, Los Angeles; WLS, Chicago, for service to agriculture; WCAU, Philadelphia, for *Wake Up America*; WBAP, Ft. Worth, for prison broadcasts; WOR, New York, for the *American Forum of the Air*; WCEO, Schenectady, for service to the Byrd expedition; WJZ, New York, for *Town Meeting of the Air*; WJJD, Chicago, for broadcasts to schools; WQXR, New York, for high musical standards; WOW, Omaha, for originating the President's Birthday Ball of 1940; KSTP, St. Paul, for *America Calling*; WBNX, New York, for service to foreign-language groups; WRC-WMAL, Washington, for the *Mile o' Dimes* feature, KVOS, Bellingham, Wash., for its Armistice Day program.

The Institute for Education by Radio made thirty awards for the fifth exhibition of recordings of educational programs, at Columbus, Ohio, May 5. First prizes for adult programs went to *London After Dark* over C.B.S., *Town Meeting of the Air* over N.B.C., and *The Mole on Lincoln's Cheek* broadcast by Station KNX, Los Angeles. C.B.S. was first among children's programs with *The Fisherman and His Wife* and *Poor Farmer Songs*. Other awards went to N.B.C. for *One Nation Indivisible* and to the New York City municipal station for *Through the Looking Glass*.

The Women's National Radio Committee on May 24 presented its 1940 awards to programs "which in one way or another help to safeguard our essential freedom" instead of for entertainment value, as previously. Among foreign commentators, Raymond Gram Swing of the Mutual Broadcasting System was voted the one "best serving the interests of democracy." Other winners were *The University of Chicago Round Table*, N.B.C., as the most effective forum, *Headlines and Bylines*, C.B.S., as the best educational program with a democracy theme, and *I'm an American*, N.B.C., as the best miscellaneous program promoting democracy.

Among the fifteen awards made by the National Headliners Club on June 28 for reporting and other news service, one went to Miss Helen Hiatt of N.B.C. and another to William L. Shirer, former commentator from Berlin for C.B.S. The William S. Paley Amateur Radio Award of 1940, announced June 17, went to Marshall H. Ensor of Olathe, Kan-

sas, who had conducted courses in radio operation over his amateur station W9BSP for the preceding ten years. A scroll in recognition of public service was awarded to Station WINS by the Veterans of Foreign Wars on June 11.

Awards for radio advertising in 1941 went to: Norman Corwin for "We Hold These Truths" on the 150th anniversary of the Bill of Rights; to the Aldrich Family program for skill in production; to the Pepsi-Cola and Pall Mall Cigarettes commercial announcements; and to the Metropolitan Opera programs, for the advancement of radio advertising as a social force. The plaques for the 1941 Showmanship Survey were awarded as follows: To CKCL (Toronto), El Mundo (Buenos Aires), WCAU (Philadelphia), WJNO (West Palm Beach), WJR (Detroit), WQAM (Miami) for show management; to WLW (Cincinnati), WNYC (New York), WRCA-WNBI (Bound Brook, N.J.), and the Council For Democracy (New York) for patriotic leadership; to the Mutual Network, KGO-KPO (San Francisco), WCKY (Cincinnati) for public relations; to the Rocky Mountain Radio Council for regional service; to the CBS Forecast series for distinguished programs, to the *New York Times* for radio program criticism.

For technical developments and a list of broadcasting stations, see the separate article on RADIO. See also CENSORSHIP, OFFICE OF; COORDINATOR OF INTER-AMERICAN AFFAIRS; DEFENSE COMMUNICATIONS BOARD; FACTS AND FIGURES, OFFICE OF; MUSIC; NEWSPAPERS AND MAGAZINES.

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RADIOTELEGRAPH. See TELEGRAPHY.

R.A.F. Royal Air Force. See AERONAUTICS; GREAT BRITAIN; PSYCHIATRY; WORLD WAR.

RAILROAD RETIREMENT BOARD. See RAILWAYS.

RAILWAYS. Labor. The bottleneck of the operation of the railways under war strain proved to be the railway labor situation. President Roosevelt's emergency fact finding board made its report and recommendations on November 5. The board was appointed on September 10, consisting of W. L. Morse, dean of the Law School of the University of Oregon; T. R. Powell, Harvard Law School; J. C. Bombright, Columbia University; J. H. Willits, Rockefeller Foundation, and Huston Thompson, attorney, Washington, D.C. The board recommended that the five operating brotherhoods should receive a wage increase of 7½ per cent over their present wage rates; that employees in the 14 nonoperating railway labor organizations should receive an addition of 9 cents per hour, equal to 13½ per cent over their present wage; that a week's vacation should be granted during 1942. The total wage increase, including details not mentioned above, was estimated at \$267,000,000.

The board recommended that the wage increases be effective as of Sept. 1, 1941, and terminate automatically on Dec. 31, 1942, and that the wage structure be then reexamined.

The operating brotherhoods rejected the findings of the board and voted to strike on December 7, 8, and 9. The nonoperating unions objected to the findings of the board but did not vote to strike. The railway managements accepted the findings of the board.

On December 2 the President announced that an agreement had been reached. The agreement grants a further 10 per cent increase in wages to the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen, the Order of Railway Conductors of America, the

Brotherhood of Railroad Trainmen, and the Switchmen's Union of North America. These are the five operating brotherhoods. The total increases granted amount to about a third of the original demands.

An important point is that the increases were made to the basic wage scale, that is they were not temporary additions to pay. This is a condition on which the brotherhoods strongly insisted. The increases given to the operating brotherhoods amount to 9½ cents an hour, or 76 cents a day. In return for the fact that the increases applied to the basic rates labor agreed to a moratorium on demands for changes in rules of work for the period of the national emergency. The cost to the railway companies of the increases which were finally made was estimated at \$300,000,000. The increases are made retroactive to Sept. 1, 1941. The Railway Express Agency did not agree to increases made to non-operating employees.

The Interstate Commerce Commission does not classify employees according to the Unions to which they belong, but by the character of their work. The number of employees in train and engine service, as reported in 1938, was 202,669 (total pay at that time, \$1,746,193,567). All of these men belong to one or other of the five unions. Thousands of other men whose work is directly connected with the actual movement of trains belong to these unions, but are classified by the ICC as "in train and engine service." It can be seen, therefore, how disastrous both to aid to England and the defense plans of the United States such a strike would have been. Hence, the strike threat was viewed in some quarters, not as an indication of the relations between railway employees and their employers, but rather as a disclosure of labor-leader opportunism.

Labor conditions are markedly improving. The annual report of the Railroad Retirement Board for the fiscal year ended June 30, 1940, the latest available, shows total benefits payable under the act creating the board amounting to \$113,733,000 for that year. This amount was 10.1 per cent above the amount for 1939. The amount for 1939 was 21.7 per cent above the amount for 1938.

According to a supplementary statement given out by the Information Service of the Railroad Retirement Board, benefits totaled \$121,799,776 during the year ended June 30, 1941. The average employee annuity in force on the same date was \$65.70; pensions in force numbered 31,080 with an average pension payment of \$58.91; survivor annuities numbered 2,771, with an average payment of \$32.50, and death benefit annuities 710 with an average of \$35.97; lump-sum death benefits certified in the year numbered 13,171, and the average benefit was \$218.64.

The balance in the railroad retirement account, according to the same statement, was \$76,803,438 of which \$74,000,000 was invested in special 3 per cent Treasury notes and \$2,803,438 was in cash. Collections during 1940-41 were \$136,942,076, which was 13.2 per cent more than the amount collected in the preceding year.

Interstate Commerce Commission. The Interstate Commerce Commission in its first annual report made after the passage of the Transportation Act said that experience under the Transportation Act of 1940 "is plainly desirable before further amendments of the Act are, in general, considered." During 1941 there were no cases that afforded any real test of the drastic change in railway regulation prescribed by the Act. Prices of railway stock in 1941 indicated that the Act itself had not proved an incentive to participation in ownership of railways.

This may have been a reflection only of the general reluctance on the part of investors and speculators to buy stocks, that is to participate in business profits and risks. The situation is illustrated by prices in the later part of 1941. Union Pacific Railroad stock was selling at 70 and was paying 6 per cent dividends on its \$100 par value stock. At this price the yield to the investor is 8.57 per cent. Pennsylvania Railroad stock was selling at 22; the company was paying \$2 a share on its \$50 par value stock. Thus the yield was 9.09 per cent. At the same time American Telephone and Telegraph stock was selling at 149 and was paying 9 per cent dividends, yielding 6.04 per cent. United States Steel stock was selling at 52, paying 4 per cent, and yielding 7.70 per cent. National Biscuit was selling at 16, paying 1.60, and yielding 10 per cent. Woolworth stock was selling at 27, paying 2 per cent, and yielding 7.41 per cent.

In contrast, Union Pacific Railroad first 3½ per cent bonds were selling at 99, giving a current yield of less than 3½ per cent. American Telephone and Telegraph 3¼ per cent bonds were selling at 110, giving a yield of 2.5 per cent. Jones and Laughlin Steel 3¼ per cent bonds were selling at 98½, giving a yield of less than 3.30 per cent. The New York Central Railroad, with the best of opportunities for sharing in war profits, paid no dividend and sold at 9½.

Passenger Trains. The attempt of railway managements to increase their earnings from passenger business included putting in service the "Southerner," an all coach train between New York and New Orleans scheduled to make the run southbound in 28 hours and 38 minutes and the run northbound in 28 hours and 50 minutes. The fastest train theretofore had made the run southbound in 31 hours and 50 minutes and northbound in 34 hours.

By Jan. 1, 1941, there were in operation three newly installed streamlined coach trains between Chicago and Florida. It was estimated that all three were operated at a profit. On the first 21 trips of the trains 3,000 passengers answered the question, "If you had not used this train how would you have traveled?" The answers ran, approximately, 24 per cent automobile, 12 per cent airplane, 7 per cent bus, 21 per cent coach on other trains, and 34 per cent Pullman sleeper. The reasons for using the trains were divided between price, speed, comfort, cleanliness.

The derailment of the Union Pacific's *City of Los Angeles* (see YEAR BOOK, 1938, page 639, for description) afforded an opportunity for appraisal of the shock resistibility of the new light passenger trains now in high-speed service. The derailment took place late in 1940 and the study was made in 1941. The train consisted of 3 Diesel power units and 15 cars of lightweight, glider-type aluminum-alloy construction. At the point of derailment the train was scheduled to run 63.6 miles per hour. No passenger was killed and none badly injured. The interior of the cars was only slightly damaged. Only one of the cars turned on its side. The power units and the cars were repairable and were returned to service.

Although it is not possible to trace earnings directly to character of passenger stations, money is being spent by the railways even in these times of depression on passenger stations. An example is the Union Station at Minneapolis, Minn. The station is used by the Chicago, Milwaukee, St. Paul & Pacific, the Chicago, Rock Island & Pacific, and the Minneapolis, St. Paul & Sault Ste. Marie. The old station was built in 1897 and the cost of present re-

pairs was \$60,000. While greater convenience was aimed at most of the money was spent to make the station more pleasing. Fluorescent lighting was installed; the waiting room walls and ceiling were painted white with chromium trim; high backed settees were replaced with upholstered furniture arranged in groups; the women's waiting room has a table, around which are grouped chairs; the men's waiting room also has the appearance of a lounge.

Motive Power. With the possibility of again being able to replace worn out equipment, increased earnings being in prospect, there has been much discussion among railway officers of what type of motive power is best adapted for railway use. Three considerations enter the discussion: (1) cost, where initial cost has to be weighed in connection with cost of upkeep and cost of operation; (2) effectiveness of service; (3) wear on track, involving rail breakage and danger of derailment.

In June, 1941, E. E. Chapman, Mechanical Engineer on the Atchison, Topeka & Santa Fe, read a paper before the American Society of Mechanical Engineers which, together with the discussion that followed, gives a comprehensive idea of opinion in 1941. Three types of motive power were considered—the steam locomotive, electric traction, and the Diesel-electric locomotive. The Interstate Commerce Commission gives the number of steam locomotives in service on Class I railways at the end of 1938 as 42,637 divided between 25,956 freight, 7,486 passenger, and 7,672 switching. The ICC gives the number of electric locomotives as 829 divided 338 freight, 328 passenger, and 163 switching.

Mr. Chapman said that in 1941 there were about 900 electric locomotives in service and that since 1925 there had been placed in service 1,300 freight, passenger, and switching Diesel-electric locomotives. The advantages claimed for the Diesel-electrics, he said, are high thermal efficiency, low water costs, flexibility, reduction of delay due to taking fuel and water, high sustained speeds, and low stresses imparted to track and dynamic braking. The disadvantages are high initial investment, short life, high repair cost, high cost of lubrication, and high unit cost of fuel. In estimating depreciation it is usual to assume a life of 15 years for road Diesel locomotives, 20 years for switching Diesels, and 28 years for steam locomotives. Mr. Chapman thought the figures for Diesels should be higher.

In discussion S. Withington gave it as his opinion that proper maintenance of Diesels amounted to complete renewal part by part so that life of the locomotive was unlimited. The manufacture of parts has now reached a standardization that makes renewal part by part feasible, Mr. Withington thought. It was generally agreed that the Diesel locomotive in switching service was more efficacious than the steam locomotive.

The Davenport 30-ton Diesel-mechanical switcher may be taken as an example. One in service on the Chicago, Rock Island & Pacific for four months worked 95.1 per cent of its assigned hours. During this time the entire maintenance cost including material and labor was \$0.184 per hour. The average grand total operating and maintenance cost was \$1.802 per hour. Switching work was done with the expenditure of fewer hours than would have been required had the work been done by a steam locomotive. There was less damage to rolling stock and lading than there would have been had a steam locomotive been used. The length of this 30-ton Diesel is 23 ft. 6 in. It operates at 15 miles an hour. It is equipped with air booster clutch and shift, and has four speeds forward and four speeds in re-

verse. It may be equipped with a special fifth speed gear for operation up to speeds of 25 miles an hour. It has 15,000 lb. tractive force.

In comparison with this Diesel-mechanical switcher is the Diesel-electric freight locomotive for main-line service of the Atchison, Topeka & Santa Fe. It has 5,400 h.p. Its length over all is 193 ft.; weight on drivers is 923,600 lb.; it has 16 pairs of driving wheels. The three largest steam freight locomotives have a weight of 1,116,000; 898,300, and 853,000 lb. respectively. The Diesel has a starting force of 220,000 lb., whereas the steam locomotives have a starting force of but 153,300; 176,600, and 160,000 lb. respectively.

Truck Auxiliary Service. In coordinating trucking with rail freight movement heretofore the railways have been hampered by the former ruling of the Interstate Commerce Commission that: "Shipments transported by applicant [truck] shall be limited to those which it receives from or delivers to either one of the railways under a through bill of lading covering, in addition to movement by applicant [truck], a prior or subsequent movement by rail." This condition has now been removed by the Commission in Case Mc-61438. In this case the ICC said in part: ". . . public convenience and necessity require the substitution of trucks for way-freight train service, regardless of whether there is a prior or subsequent movement by rail." The American Trucking Association unsuccessfully tried to force the railways to use independent motor-operator's trucks instead of the railways own trucks. The railways showed that by the use of their own trucks the through rate would be lower.

The interpretation given this Mc-61438 case by lawyers generally was that the Interstate Commerce Commission would not force competitive conditions where competition resulted in higher rates. The implications of the decision are far reaching. It permits the railways to keep their monopoly of transportation so long as they furnish the transportation at a lower cost than independent competitors. For the time being it gives shippers lower rates and strengthens monopoly. Railway officers have for years said among themselves that monopoly is necessary to profitable operation. Public opinion has been against them. Now the ICC seems to agree with them.

What can be done under this new ruling of the Interstate Commerce Commission is being shown by what the Dominion Atlantic was doing in Canada during 1941. This road is a separately operated subsidiary of the Canadian Pacific and runs from Halifax to Yarmouth along the Bay of Fundy. There is a paved highway paralleling its entire line. Way freight-train service was abandoned on about two-thirds of the line, truck service was substituted and a pick-up and delivery service was added.

During the first month of the combined local and pick-up and delivery service the revenue from less than carload freight was \$32,909 as compared with \$28,984 revenue from l.c.l. freight in the same month of the previous year—a gain of 13½ per cent. Furthermore, by combining pick-up and delivery service with local service, private truck competition was eliminated. Thus elimination of competition resulted in improved service with increased revenues which is the assumption underlying the Interstate Commerce Commission's changed ruling. It follows the recommendation made by J. B. Eastman in his report made when he was acting as Coordinator of Transportation.

By the introduction of trucking service in l.c.l. business the Dominion Atlantic effected economies in its freight service generally. Car loading was in-

creased from an average of 19.2 tons to 23 tons. Over-time engine crew hours per 1,000 train miles were reduced by 61.2 per cent. Train crews were reduced by 52.1 per cent. The average loading of freight and mixed trains increased 10.5 per cent. Gross ton miles per hour increased by 79.3 per cent.

Railway Income. The railways of the United States in 1941 did the greatest freight business in their history. They carried 470 billion ton miles as compared with 373 billion 253 million ton miles in 1940 and 447,322,000,000 in 1929. The income account of class 1 roads showed the increase in business done with the offsetting effect of the delayed maintenance expenditures. Thus total operating revenues in 1941 were \$5,325,000,000 as compared with \$4,297,000,000 in 1940 and with \$5,281,000,000 in 1930. Net operating income—that is the amount left after expenses but before the payment of rentals and interest on debt, was \$980,000,000 in 1941, \$682,000,000 in 1940, and \$869,000,000 in 1930.

The break-up of revenues and expenses is shown in the following table:

	1941 (Millions)	1940 (Millions)
<i>Income</i>		
Freight revenue	\$4,432	\$3,537
Passenger revenue	510	417
Mail revenue	108	101
Express revenue	60	56
All other	215	186
Total	\$5,325	\$4,297
<i>Expenditure</i>		
Maintenance of way	\$ 600	\$ 497
Maintenance of equipment	990	819
Traffic	115	107
Transportation	1,760	1,501
General and other	195	165
Total	\$3,660	\$3,089

Average revenues per ton mile in 1941 were 0.942 cent in 1941 comparing with 0.945 cent in 1940 and 0.973 in 1939. Changes in the character of traffic in part explain the lower revenue per ton mile. These changes also show where the railways were being hit by truck competition:

CARLOADINGS, BY GROUPS OF COMMODITIES (Thousands)

	1941	Increase over 1940 (Number) (Per cent)	
Miscellaneous	18,375	3,533	23 8
Mdse, L. C. L.	8,065	386	5 0
Coal	7,610	790	11 6
Ore	2,683	535	24 9
Forest Products	2,183	383	21 3
Grain and products	2,006	171	9 4
Coke	678	129	23 5
Live Stock	650	Dec. 35	Dec 5 2
Total	42,250	5,892	16 2

Performance. The average train-load of revenue freight in 1941 was 951 tons. That compares with 849 tons in 1940 and with 733 tons in 1931. The average revenue load per freight car in 1941 was 28.4 tons comparing with 27.6 in 1940 and 25.7 in 1921. Changes in character of traffic explain this gain in part but—and it is a very important but—the miles per day per freight car in service were 45.8 in 1941 comparing with 42.6 in 1940 and 29.6 in 1922. Speed of freight trains is only one of the factors. The average speed of freight trains in 1941 was 16.5 miles per hour. In 1940 it was 16.7 and in 1922 it was 11.1. Delays on sidings in 1941 were considerably less than in 1940.

Additions and Betterments. Very significant of the present trend of railway development is the fact that in 1941, with total capital expenditures of \$600,000,000, the total mileage of new railway

built was 54, the mileage of railway abandoned was 1,509, while for the same year the railways and their subsidiaries bought 641 motor buses, 4,106 units of highway freight equipment, 385 automobiles, and 2 miscellaneous vehicles. It is also significant that with \$600,000,000 capital expenditures, total railway securities sold to the public amounted to but \$324,953,000, and at the end of the year the railways were indebted to the Reconstruction Finance Corporation to the extent of \$443,443,989. Some of it of course being for loans made prior to 1941.

A considerable part of the capital expenditures was for the installation of centralized traffic control. Under this new system, replacing the time-honored system of train orders, the engine-driver's movements are controlled by signals operated by a man in a central tower. It is estimated that centralized control should give single-track 75 per cent of the capacity of double track. The following table shows signal installation in 1941 as compared with 1940:

COMPARISON OF ANNUAL SIGNAL CONSTRUCTION

Type of Installation	Number of units	
	1940	1941
AUTOMATIC BLOCK SIGNALS	1,017	1,407
HIGHWAY CROSSING PROTECTIVE UNITS	3,006	2,615
INTERLOCKINGS		
Signals and switches at new plants	1,024	518
Signals, switches, and electric switch locks added at rebuilt plants	734	693
Signals and switches at automatic plants	125	80
CENTRALIZED TRAFFIC CONTROL		
Signals, switches, and electric switch locks	496	868
SPRING SWITCHES		
Spring mechanisms	294	275
Mechanical facing-point locks	97	159
Signals installed at spring switches	336	353
CAR RETARDERS	11	-
	7,140	6,968

Locomotives Ordered. The total number of locomotives ordered for use in the United States in 1941 was 1,436 comparing with 712 in 1940. The orders were divided, 302 steam locomotives, 1,096 Diesel locomotives, and 38 electric locomotives. There were a third more steam locomotives ordered in 1941 than in 1940 but there were over twice as many Diesels. Of the total of all locomotives 176 were for the government as compared with 9 in 1940.

Freight Cars Ordered. A total of 131,670 freight cars were ordered in 1941, comparing with 70,562 in 1940. Freight cars built in 1941 totaled 86,843; 56,603 in 1940.

Passenger Cars Ordered. There were 639 passenger cars ordered in 1941; 475 in 1940. There were 339 passenger cars built in 1941; 200 in 1940.

Equipment Prices. In 1941 prices for Diesel locomotives ranged from \$60,290 for a 660 h.p. switcher weighing 220,000 lb. to \$506,928 for a 5,400 h.p. freight locomotive weighing 920,000 lb. A 4-6-6-4 steam freight locomotive weighing 620,000 lb. cost \$231,750.

A steel box car of 100,000 lb. capacity cost about \$3,000 and a steel gondola of 100,000 lb. capacity cost about \$2,365.

Fuel. The average cost of coal for railways in 1941 was two dollars a ton at the mines and \$2.55 a ton with freight added. This compares with \$1.88 at the mines and \$2.45 with freight added in 1940. Fuel oil cost an average of 2.12 cents per gal. in 1941 and 2.02 cents in 1940. Diesel fuel cost 4.45 cents per gal. in 1941 and 4.48 in 1940. In comparing coal costs it should be noted that in 1941 some railways were compelled, on account of government coal requirements, to go to more distant

fields for their coal so that freight was a larger item in their coal costs.

Dividends. The only important change in dividend rates was the resumption of common stock dividends by the Atlantic Coast Line and larger payments made by the Pennsylvania Railroad and by the Louisville & Nashville Railroad.

Receiverships. No important railway companies went into receivership in 1941 and but 25 miles of railway were placed in receivership as compared with 6,194 miles in 1938. Apparently the liquidation of weak railways was about completed by 1938. Nine railways, with a total mileage of 5,031, were taken from receivership in 1941.

For railway bonds, see FINANCIAL REVIEW under *Security Markets*. For index of freight car loadings, see BUSINESS REVIEW. See also ACCIDENTS; DEFENSE TRANSPORTATION, OFFICE OF; FLOOD CONTROL; TAXATION; TRANSPORTATION DIVISION; TUNNELS.

WILLIAM E. HOOPER.

RAINFALL. See METEOROLOGY.

RAPID TRANSIT. In local passenger transportation, urban and suburban, an outstanding development of 1941 was the tremendous increase in traffic resulting from the national defense program, with its vast increase in employment of skilled and common labor, as well as in technical and office workers. At Washington, with its influx of employees, government departments adopted staggered hours of work as a means of checking the congestion of traffic during the morning and afternoon rush hours. In many cities the number of passengers increased so rapidly that the transportation authorities were unable to increase the number of their vehicles proportionately, so that a very serious and difficult situation was created.

The problem of handling this traffic is likely to become still more serious under war conditions, owing to the increase in employment, the difficulties in production of the needed street cars and motor coaches, and the numerous and increasing restrictions upon the production and use of private automobiles. Black-outs, incident to war conditions, represent a new and dangerous factor in relation to street traffic, and add a new difficulty to the already difficult problem of controlling street traffic in the interests of convenience and safety. A minor development will be the increasing employment of women as drivers and conductors, as well as cleaners and shop workers.

For the special problem of handling crowds of workers at new plants, and of soldiers at new camps, in suburban or outlying districts, the motor-coach shows its advantage in rapid establishment and flexibility of operation of the necessary service. There is no track or overhead wiring to be installed, or to become useless if the plant or camp is abandoned or moved to another site.

The trend towards discontinuance of street-railway lines continues, together with the substitution of motor coaches or buses for such lines, but the extent of the change has been less than in other recent years. While most of the coaches have gasoline engines, there has been a steady increase in the number of trolley-buses, usually on lines formerly operated by trolley cars. It is estimated that some 3,000 trolley-coaches are now in service. At Seattle, Wash., the last of the street-railway cars and cable cars were taken out of service in April.

In some cities, the abandoned tracks have been taken up, either for repavement with a smooth surface or to furnish needed scrap metal for the

steel industry. But in other cases the cost of removal and repaving is more than the value of the metal recovered, so that the material may be left in place unless the Federal government assumes a part of the cost of removal.

There has been also some decline in the mileage of elevated railways, generally due to the extension of subways. This is the case in New York and Brooklyn, while in Chicago the new subway system aims at the eventual removal of the elevated "loop" around the central business district. At Cincinnati, Ohio, a report on improvement of street traffic facilities has suggested a belt-line boulevard around the city to enable automobiles to approach their destinations before entering the congested district, and a belt-line subway around that district for the use of all public transport vehicles. This subway would utilize and extend the one built several years ago, but never put into service. Since the cost of the proposed system would be some \$15,000,000, its serious consideration must be left for the future.

On the two Chicago subways (parts of a comprehensive system) construction was completed on the State Street line, and it was being equipped with track, electric cables, wiring, and station equipment to be ready for operation in 1942. This includes basic construction for 26 stations, but considerable changes were made in the station plans to avoid use of materials affected by priority control under war conditions. Contracts have been let for steel work of three inclined connections with the elevated railways, and for much of the equipment material. The operating company is to provide rolling stock, and when the new unification ordinance becomes effective the company will reimburse the city for funds advanced in order to expedite the work.

On the Dearborn Street line, construction has been halted pending State approval of a super-highway over the Congress Street section of the subway, since the cost would be reduced considerably if both projects were carried on together. Although June 30, 1942, is the date for completion of both lines, the delays due to war conditions and the Congress Street extension may necessitate an extension of time, but it is planned to have the State Street line ready for operation late in 1942. Progress has been made with the court proceedings to provide for merger of the existing transportation companies under a unification ordinance.

In Brooklyn, N.Y., five miles of the Long Island Railroad occupying Atlantic Avenue are being placed underground, eliminating $1\frac{1}{4}$ miles of elevated line and $3\frac{3}{4}$ miles of surface line, together with a score of grade crossings. The subway tracks are about 30 ft. below street level and the roof is covered with 5 ft. of earth fill, to form the central part of a boulevard 120 ft. wide. The subway has a concrete floor and side walls, with a central row of steel columns and steel roof beams carrying the concrete roof. A central wall 5 ft. high prevents damage or collision in case of derailed trains. This work is to be completed in 1942. At Boston, the Huntington Avenue subway of the Boston Elevated Railway, opened on February 16, at a cost of \$7,126,000, removes surface trolley cars from a busy section of street and provides for future operation of third-rail trains. It is 4,200 ft. long, of concrete construction, with two "tubes" 12 ft. wide and 15 ft. high carrying track of 85-lb. rails on wood ties in stone ballast. This subway is estimated to save riders 20 minutes during rush-hour periods, with cars at 2-minute intervals, and 10 minutes at other times, with 4-minute service.

Escalators are being used more and more on subway stations, being more convenient and speedy than elevator service and eliminating the tiresome climbing of stairs. The greatest vertical travel of escalators is said to be 86 ft. in some of the London underground stations, while those at the Lexington-Third Avenue station in New York have a rise of 56 ft. 3 in. Car-washing machines, consisting of a series of vertical revolving brushes and water jets, are used by many street-car and bus companies.

The underground railway system of London, England, comprising a network of lines under one control, reached its jubilee in 1941. Its first section was three miles long, but it has now some 200 miles, including surface extensions. A curious development of this system is the construction of isolated lengths of deep tunnels for present use as public bomb shelters and eventual use as extensions of the underground railways. But as the cost is enormous in relation to the protection provided, and the relations to public health are objectionable, while the economic direction of future extensions of the railways cannot be predicted, an investigating committee has recommended that no more such tunnels be built.

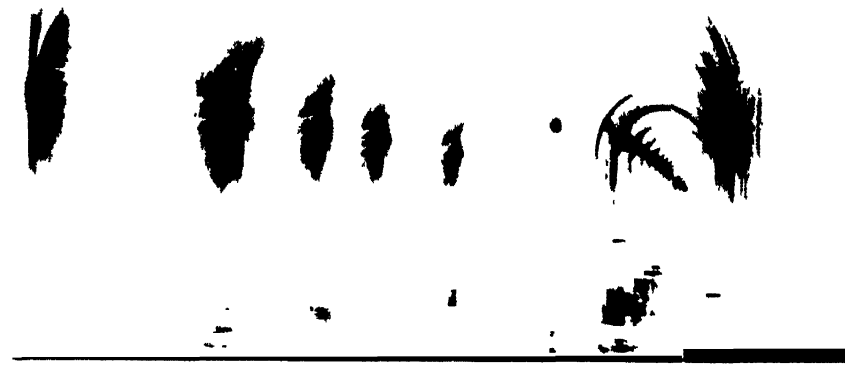
War conditions in Europe have led to the curtailment of street-railway lines and services, with many miles of track taken up to supply material for steel-making. It has led also to experiments with new fuels, in view of the great demand for gasoline as war material. London and other cities in England are using coal-gas for buses. Ireland is trying gas from anthracite and peat charcoal. Denmark is using natural gas and coal gas, as well as gasoline produced from lignite.

At Melbourne, Victoria (Australia), the streets adjacent to the great Flinders Street railway terminal station have had such a congestion of passengers due to the use of the station for both main-line and suburban trains that connections are to be made with the underground railways, so that many suburban trains can proceed beyond the terminal station and so serve a number of city stations. In spite of the war, Italy is proceeding with the construction of the 7-mile underground line from the Termini main-line station to the site of the proposed 1942 international exposition, although all plans and construction for the exposition have been stopped. The trains are to consist of two motor cars with four non-motor cars between them. On the street-car lines, articulated two-car trains are being tried experimentally.

Street-car service at Panama City was discontinued on May 31 by order of the government, a new franchise having been given to the motor-bus company. The former company was required to remove the rails, except in streets where they are embedded in concrete. In Berlin, service has been abandoned on several street-car lines, owing to labor shortage and the need of conserving electric current for war purposes. In general, Germany prefers street railways where traffic warrants the expense, but under war conditions there is greater use of the trolley-bus on streets having overhead wiring, since no gasoline or fuel oil is required. It is considered that in peace times the use of trolley buses is rarely economical and should be limited to towns of 25,000 to 100,000 population. See TRANSPORTATION DIVISION.

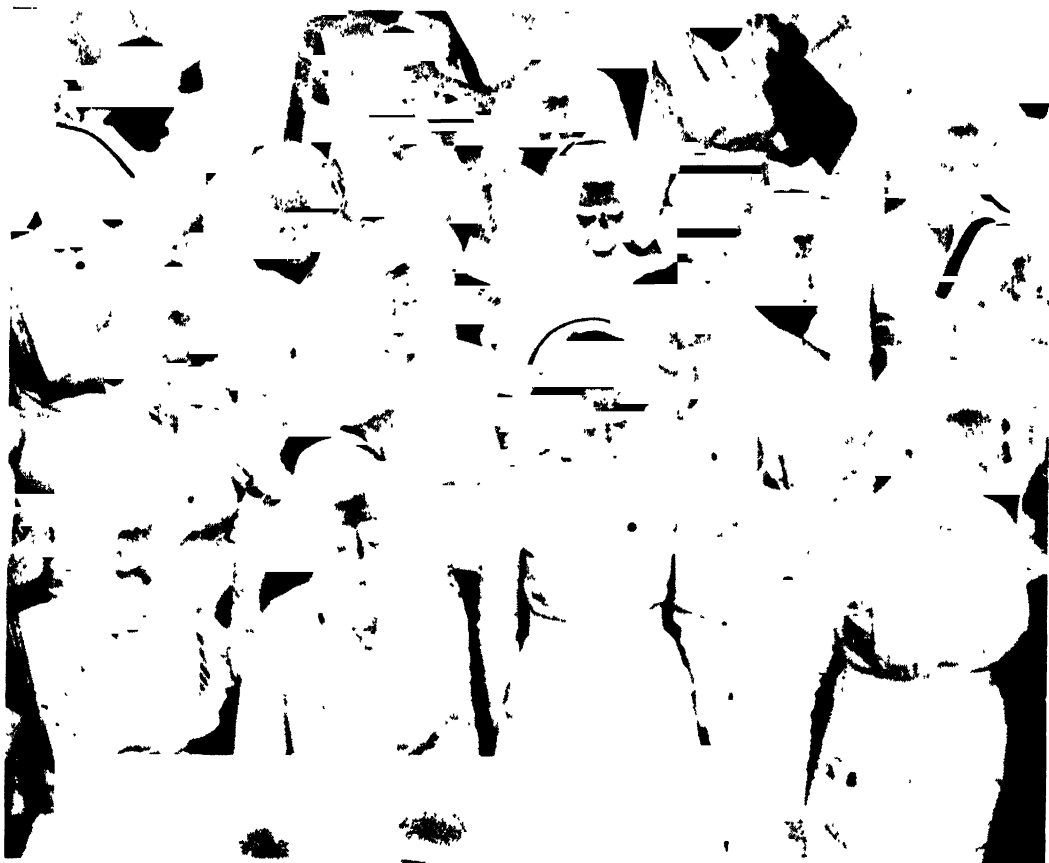
E. E. RUSSELL TRATMAN.

RATIONING. See BUSINESS REVIEW under *Restrictions Under the Defense Program*; **MARKETING**; **PRICE ADMINISTRATION**, **OFFICE OF**; the various belligerent countries under *History*.



CHICAGO'S INITIAL SYSTEM OF SUBWAYS

Above: Cross-over in the outlying section of Route No. 1, which, in 1941, was being equipped for operation. These tubes, horse-shoe in shape, were fashioned by the hand-mining method. Below: Rear view of one of the four shields which mined the downtown tubes. See *RAPID TRANSIT*.



**VOLUNTEERS
FOR THE
NATIONAL WAR EFFORT**

Photos from American Red Cross

Among civilian organizations, "conversion to defense" is the theme of the year. Above: Senior nursing students tour an Army post in the Red Cross nurse-recruiting drive. Below: One of the Red Cross Field Directors, stationed at Army and Naval posts to handle personal problems, dispatches a message to a soldier at the "front" during maneuvers. See **CIVILIAN DEFENSE; RED CROSS, SOCIETIES AND ASSOCIATIONS**

RFC SUMMARY OF ACTIVITIES FEB. 2, 1932, THROUGH DEC. 31, 1941

	<i>Authorizations</i>	<i>Disbursements</i>	<i>Repayments and other reductions</i>
For benefit of agriculture	\$2,604,071,430	\$1,450,652,374	\$1,448,940,848
To open banks to meet demands of depositors	1,334,805,161	1,138,251,619	1,082,584,822
For distribution to depositors in closed banks	1,391,474,104	1,035,530,126	1,003,087,205
For bank capital (including Export-Import Banks \$176,500,000 and Federal Home Loan Banks \$124,741,000)	1,645,205,689	1,469,712,331	744,230,583
For self-liquidating projects (including PWA municipal securities)	1,270,701,298	1,058,500,414	895,865,658
To business enterprises	587,650,939	271,978,915	162,329,107
For loans for National Defense	5,338,612,873	980,346,623	173,152,054
For loan to Great Britain and Northern Ireland	425,000,000	350,000,000	4,844,381
For purchases of stock—National Defense	120,100,000	20,100,000	
To drainage, levee, and irrigation districts	147,747,818	98,210,980	25,397,370
To railroads (including PWA railroad securities)	1,531,530,885	1,027,450,714	554,448,632
For loans to and capital of mortgage loan companies (including \$25,000,000 capital The RFC Mortgage Company and \$11,000,000 capital Federal National Mortgage Association)	760,367,930	586,658,311	371,286,372
For loans to and capital of insurance companies	138,914,750	125,168,209	102,418,473
To building and loan associations (including receivers)	170,530,059	125,275,297	122,114,740
To public school authorities	25,074,050	23,242,170	22,393,900
Catastrophe rehabilitation loans	16,184,520	12,003,055	10,975,936
To state funds for insurance of deposits of public moneys	13,087,715	13,064,631	13,064,631
For mining, milling, and smelting businesses	16,578,100	6,898,409	3,126,779
For loan to Export-Import Bank	25,000,000	25,000,000	25,000,000
For other purposes	669,057	614,813	614,813
Total—By Directors of the Corporation	\$17,563,806,385	\$9,818,058,998	\$6,765,876,312
Allocations and loans to other governmental agencies and for relief by direction of Congress	3,484,649,945	3,199,696,363	2,852,014,066
Grand Total	\$21,048,456,330	\$13,018,355,361	\$9,617,890,379

* Includes \$2,738,724,131 of Corporation's notes canceled pursuant to Act of Congress, approved Feb 24, 1938.
 † Includes \$42,508,118 credited on indebtedness for property taken over for debt

RAYON. See CHEMISTRY, INDUSTRIAL; TEXTILES.
RECLAMATION, Bureau of. See AQUEDUCTS; DAMS; TUNNELS.

RECONSTRUCTION FINANCE CORPORATION (RFC). The Reconstruction Finance Corporation, one of several agencies grouped under the Federal Loan Agency, may perform all its functions to Jan. 22, 1947, or such earlier date as the President may authorize. The Corporation was created by Act of Congress approved Jan. 22, 1932, to provide emergency financing facilities for financial institutions, to aid in financing agriculture, commerce, and industry, and for other purposes. Subsequent legislation extended its operations. The capital stock of the Corporation was fixed by section 2 of the Reconstruction Finance Corporation Act at \$500,000,000, all of which was subscribed by the Secretary of the Treasury on behalf of the Government of the United States on Feb. 2, 1932. The entire capital stock has been paid in by the Secretary of the Treasury. Pursuant to the provisions of section 2 of the Reconstruction Finance Corporation Act, as amended by the Act of Congress approved June 25, 1940, the Corporation retired \$175,000,000 of its capital stock at par.

The accompanying table summarizes the activities of the Reconstruction Finance Corporation, covering the period Feb. 2, 1932, the date the Corporation began operations, to Dec. 31, 1941.

CHARLES B. HENDERSON.

RECREATION. See CONSUMERS' COOPERATIVES; JUVENILE DELINQUENCY. For ARMY AND NAVY RECREATION PROGRAMS, see DEFENSE HEALTH AND WELFARE SERVICES; SOCIETIES under United Service Organizations, etc.; YOUTH MOVEMENT.

RED CROSS, American National. The outbreak of the war found the American Red Cross ready with the full force of its wide experience of more than sixty years. Both at Manila and Honolulu the Red Cross was ready to give immediate medical help, emergency first aid, and evacuation assistance to civilians. Red Cross trained personnel were instantly available.

Large stores of emergency supplies had been

strategically placed. In the Philippines, ten, and in Hawaii, twelve, fully equipped Red Cross first aid stations of 50 beds each were set up and ready to operate. Schemes for evacuation from bombed areas under Red Cross direction had been devised and rehearsed beforehand.

Within twenty-four hours after Japan struck in the Pacific, the American Red Cross launched a war fund campaign for at least \$50,000,000 to discharge the traditional responsibilities delegated to it under its Congressional Charter. The campaign was at once endorsed through a White House proclamation issued by President Franklin D. Roosevelt.

Following the President's declaration of a state of national emergency, the American Red Cross last year undertook the greatest development of its domestic services since the days of the first World War.

For military defense, the national organization assigned field directors to every Army and Navy station here and abroad to act as the communicating link between the man in uniform and his family back home. In key metropolitan chapters the Red Cross began recruiting 200,000 blood donors to safeguard the lives of men daily confronted with the hazards of military life. In chapter work rooms, more than 1,250,000 women produced 40,000,000 surgical dressings to stock Army and Navy medical supply depots; simultaneously they launched a nation-wide project to knit 500,000 sweaters for the armed forces. In military camps and naval stations Red Cross instructors began classes in first aid and water safety. From the First Reserve of Red Cross nurses, the Army and Navy drew more than 6,000 trained women, requesting 4,000 more by the summer of 1942.

Growing consciousness in the need for civilian defense preparedness likewise had a pronounced effect in the expansion of domestic services of the Red Cross. Throughout the nation Red Cross disaster preparedness committees undertook measures to strengthen facilities for feeding, housing, clothing, and providing medical attention in event of national or sectional emergency brought about by sabotage, epidemic, armed invasion, or sporadic attacks from the air or sea. In cooperation with the U.S. Office of Civilian Defense, the Red Cross

began training 100,000 Nurse's Aides, 100,000 Nutrition Aides, 500,000 Canteen Aides, and to train 500,000 in the rudiments of Home Nursing. Also in cooperation with the OCD, the Red Cross, by the end of 1941, was training men and women in first aid at the rate of 1,000,000 yearly—almost triple that of the preceding year.

Meanwhile the plight of foreign war victims was not overlooked by the American Red Cross. In hand with its sixty-three sister societies throughout the world, the American Red Cross extended aid in England, the British Middle East, China, Russia, unoccupied France, and also to other continental European nations prior to their seizure by Axis powers. For shipment abroad Red Cross volunteers produced some 30,000,000 surgical dressings and 7,000,000 articles of clothing. Shipment of food, medical supplies, and purchased clothing brought American Red Cross relief abroad to the \$50,000,000 mark, including expenditures made from a \$21,000,000 fund contributed by the public and distribution of supplies bought with funds allocated for that purpose by the Congress. By the end of the year, war victims in Great Britain and her war zone possessions had received more than half of all American Red Cross foreign war relief.

The American Red Cross had 3,735 chapters with 6,131 chapter branches in the United States and the insular possessions on June 30, 1941. In the 12 months preceding June 30, the American Red Cross conducted disaster relief operations at the scene of 149 catastrophes occurring in Continental United States. Assistance was given 217,000 persons at a cost of \$946,626. During the year 260,332 water safety certificates were issued. Through the same period 577,267 first aid certificates—the largest number in the 31-year history of the program were issued.

The problems of 127,098 disabled veterans or their families were dealt with by chapter workers. In hospitals and regional offices of the Veterans' Administration and in other Government hospitals, representatives of the national organization dealt with 51,729 ex-service men or their families. Chapters aided 29,147 men now in regular service, or their families. Red Cross field directors in Army, Navy, Coast Guard, and Marine Corps stations and workers in Government hospitals handled the cases of 126,515 men in active service or their families.

On the active list of the Red Cross Nurses' Reserve were 62,937 (Dec. 30, 1941) nurses ready for calls from Army, Navy, and Red Cross disaster service. In 460 communities where other nursing facilities were not available, the Red Cross maintained a total of 639 nurses.

During the year 999 Red Cross chapters conducted 5,712 courses in Home Nursing, certifying 80,939 persons. Accomplishment of volunteers in special services included: Production of 473,365 pages of Braille transcribed by hand for blind readers and 371,138 pages printed by duplicating process: the making of 193,259 calls by members of motor corps; the feeding of 104,557 persons by canteen workers. Membership for the year ended June 30, 1941, was 9,190,474 men and women—an increase of 2,051,211 over that of the year ended June 30, 1940.

The President of the United States is president of the American Red Cross. Norman H. Davis is chairman of the Central Committee, having been named by President Roosevelt on Apr. 12, 1938, to succeed the late Rear Admiral Cary T. Grayson. The Central Committee is composed of 18 members, six of whom are appointed by the President of the United States to represent the Government.

REFERENDUM AND INITIATIVE. See GEORGIA; KENTUCKY; MAINE; MICHIGAN; NEW YORK; OKLAHOMA; WISCONSIN.

REFORMED CHURCH. A name used by three religious denominations in the United States. The Reformed Church in America, formerly the Reformed Dutch Church, was founded in New York in 1623 as a branch of the Reformed Church in Holland. Headquarters, 25 East 22 Street, New York, N.Y. The Christian Reformed Church was established in Michigan in 1857 by a group who withdrew from the former body. Headquarters, Grand Rapids, Mich. For statistics, see RELIGIOUS ORGANIZATIONS.

REFRESHER COURSES. See EDUCATION. Compare DEFENSE TRAINING.

REFRIGERATION. See GAS INDUSTRY.

REFUGEES. Although 1941 saw a diminution, as compared with 1940, in numbers of people newly uprooted from their homes the world over, the difficulties of tens of millions of human beings who can be classified as refugees, were intensified. Those who had been victims of mass population movements in 1940 and had as yet been unable to return to their homes or take root elsewhere, found their resources dwindling at an alarming rate. Clothing was worn out, cash was used up, and even the first flood of public sympathy and helpfulness, which eased their plight at the time of expulsion or flight, began to dwindle.

In terms of numbers, the largest refugee group was in China, where 30,000,000 war refugees fled before the Japanese armies to the agricultural hinterlands in the west. For the most part, sustained flight was limited to skilled laborers, industrial leaders, small merchants, government employees, students, and intellectuals. Unskilled laborers and peasants, whether because of inertia, lack of funds, or the need for continued cultivation of the land, moved shorter distances and were prone to return to their homes as soon as the Japanese stabilized the occupied areas or the Chinese armies recaptured them.

In Europe, the movement of refugees was greatly reduced in volume as compared with the preceding year. In 1940 mass movements had involved 3,000,000 Poles, fleeing eastward and southward from German-occupied into Soviet Poland, and later 300,000 of them transported in sealed trains to Siberia. At the same time, over 500,000 people of German stock had been repatriated to Germany or German-occupied Poland from Bukovina, Bessarabia, Rumania, and the Italian Tyrol. Finland had seen 400,000 people uprooted and forced to find new homes within the restricted borders provided in the peace treaty with the Soviet Union. Another huge movement had involved the flight of 3,000,000 Dutch, Belgian, and French people from the Low Countries and Northern France at the time of the German invasion in May, 1940.

During the latter part of 1940 and throughout 1941, some of these movements reversed themselves. The majority of the refugees who had come to Southern France returned to their homes after the armistice. On the other hand, fresh deportations took place during the fall of 1940, such as the expulsion of 100,000 French inhabitants from Luxemburg and Lorraine. As the Finns regained the Karelian territory from Russia during the latter half of 1941, the resettled people moved back to their former homes where those had not been destroyed.

However, the German war against Russia, which

began with the invasion of Russian-occupied Poland and proceeded to within a few miles of Moscow, uprooted many millions. Approximately 2,000,000 Polish nationals were moved out of the theater of war into the far reaches of Siberia and Asiatic Russia. Enormous Russian populations were likewise evacuated, but some returned when the Russians later recaptured certain areas in central and southern Russia from the Germans. Other populations uprooted because of military reasons included tens of thousands of American and Filipino women and children in Manila, who were evacuated with the United States army in the battle for the island of Luzon, as well as substantial numbers of British nationals who had to leave Hong Kong and other parts of the British Far East as a result of the Japanese attack in those areas.

The exodus of Jews from Europe, which had been the first refugee movement of any size since World War I, diminished somewhat during 1941. Although 500,000 had left the borders of Germany and the lands which subsequently fell under German domination, such as Austria and Czechoslovakia, since 1933, there remained nearly 450,000 people of the Jewish faith in the countries of Greater Germany at the beginning of 1941. In addition, several million were under direct or indirect German domination in Poland, Rumania, Hungary, Yugoslavia, etc. By the end of the year, the Jewish population of Greater Germany proper had been reduced by about 125,000. Of these, approximately 20,000 had been able to emigrate to countries of permanent asylum overseas, while the remaining numbers had been deported to Poland in a German drive to make the Reich Judenrein. A high death rate and an extremely low birth rate likewise contributed towards the reduction of the Jewish population in Germany.

The distribution of the refugees who had left Greater Germany from 1933 through 1941 was approximately as follows: United States, 200,000; Central and South America, 115,000; Palestine, 85,000; Shanghai, 20,000; England, 40,000, and still in continental Europe, approximately 75,000. France contained the largest number of Jewish refugees still on the continent. Smaller numbers were to be found in Switzerland, Spain, Portugal, Italy, Hungary, Rumania, Sweden, Yugoslavia, and Northern Africa. Little groups were scattered all over the world, in such remote areas as Burma, Australia, New Zealand, Turkey, South Africa, etc.

The principal route used by refugees in leaving Europe during 1941 was via Spain and Portugal. During the latter part of 1940 and the first month or two of 1941, some 2,500 refugees used the trans-Siberian route from Lithuania to Vladivostok and then Japan, but this movement ceased when the Japanese refused to grant further transit visas. Towards the end of the year, the emigration stream was greatly reduced for a number of reasons. In the first place, a new visa control system instituted by the United States, which centralized visa applications in Washington, imposed much more stringent regulations on refugees desiring to enter the United States. Central and South American lands, fearing the possibility of fifth columnists, also closed immigration doors tightly. The most compelling measure to reduce refugee emigration, however, was taken by Germany when in November a policy was adopted of not granting exit permits to Jews of military age, and a few weeks later complete stoppage of exit permission took place.

Certain shipping difficulties also contributed to the shrinkage in emigration. At the beginning of the year, the trans-Atlantic route was plied by

American, Portuguese, and Greek steamers. The invasion of Greece during the early spring necessitated the withdrawal of Greek boats and shortly thereafter, American defense requirements necessitated the use of several steamers which had formerly serviced emigration from Europe. Partial compensation for these losses, however, was made when Spanish boats entered the traffic. With the American entry into the war in December of 1941, the American Export Line, which held the New York-to-Lisbon franchise, announced that it had stopped this run, and the field was left to the neutral Portuguese boats. The extension of the theater of war to the Middle East made immigration to Palestine difficult, and only 15,000 refugees were able to reach its shores in 1941.

The year 1941 ended with millions of homeless people temporarily stalemated, awaiting the end of the war before they can be either repatriated or permanently resettled. International bodies were able to do little more for these people than make plans for postwar rehabilitation. On the other hand, extensive relief programs were carried out by a number of private and governmental agencies to ease the immediate plight of the homeless. See WAR RELIEF; also ART under Exhibitions, BRAZIL and DOMINICAN REPUBLIC under History; articles listed under EMIGRÉ LITERATURE.

JAMES G. McDONALD.

REGIONAL CONFERENCE OF THE RIO DE LA PLATA. The first Regional Economic Conference of the Río de la Plata was held at Montevideo, Uruguay, during Jan. 11–Feb. 6, 1941, with official delegates of Argentina, Bolivia, Brazil, Paraguay, and Uruguay in attendance. Observers appointed by the governments of Chile, Peru, and the United States were present at the invitation of the conference.

The conference was called at the joint request of the Bolivian and Paraguayan Foreign Ministers, in line with recommendations for regional solutions of economic problems made by the Panama Conference of American Foreign Ministers in 1939 (see YEAR BOOK for 1939, p. 596). It was specifically concerned with reducing the physical and legal handicaps to foreign trade and communication imposed upon Bolivia and Paraguay by their inland positions and lack of seaports. The Chaco Peace Conference that settled the old controversy between Bolivia and Paraguay over the Chaco Boreal in 1938 had recognized Bolivia's landlocked position as a major cause of the Chaco War of 1932–35. It likewise had recommended the cooperation of the countries neighboring Bolivia and Paraguay in settling this problem. Moreover all of the participating countries were concerned with finding new markets and sources of supply for those cut off or impaired by the European War.

During its 11-day sessions, the conference adopted 9 conventions and 17 resolutions, all designed to further economic cooperation among the republics of the Río de la Plata basin. Probably the most important convention was one binding Argentina, Brazil, and Uruguay not to invoke the most-favored-nation principle to obtain special concessions granted by any one of them to Bolivia and Paraguay. The convention was contrary to the unconditional most-favored-nation clause approved as the basis of inter-American commercial policy at the Pan American Conference in Lima, Peru, in 1938. However it was accepted without protest by the United States, chief advocate of the most-favored-nation principle.

Another convention established a regional office at Buenos Aires to study and report on the practical

results of the resolutions adopted by the conference and to collect data on economic problems of mutual interest. Shipments to and from Bolivia or Paraguay were to receive preferential treatment in the form of rebates on freight rates by the other three countries, according to another convention. Others provided for bilateral accords among the five participating countries on foreign exchange, banking facilities, and credits; tariff-free transit for Bolivian and Paraguayan trade crossing Argentine, Brazilian, or Uruguayan territories; and mutual encouragement of tourist travel.

Another convention bound the five countries to grant facilities for the transport of petroleum by pipeline from a producing country across any of the others, with exemption of the oil from all charges other than those paid by home-produced petroleum. This bound Argentina to facilitate shipments of Bolivian oil across its territory by pipeline without imposing tariffs or taxes additional to those levied on Argentine-produced oil. The remaining conventions established regional parcel post services at reduced rates, and authorized free visas for immigrants entering any one of the five countries in transit to another. These conventions required ratification by the participating governments before going into effect.

Among the 17 resolutions adopted was the Argentine proposal that the feasibility of a regional customs union be studied by the five governments. Others called for regulation and extension of border retail trade by bilateral treaties; extension of commercial arbitration; reduction of consular fees and adoption of uniform consular forms and regulations; an international conference to draft uniform legislation on transportation and foreign exchange; the promotion of the Pan American Highway by establishment of a central organization and national committees; and exemption of ferryboats from international port dues. Reciprocal extension of national advantages and privileges to one another's vessels engaged in inland river traffic was envisaged in another resolution. Others provided for the establishment of mixed commissions of technical experts to study regional cooperation in the construction of public works; establishment of animal and plant quarantine by bilateral agreement; the ratification of measures for suppressing smuggling; freer interchange of books; establishment of free port zones; organization of mixed commissions to study the improvement of navigation on the Río de la Plata and its tributaries; and the creation of facilities for preferential distribution of native products, raw materials, and manufactured articles among the five countries.

In his opening address, Foreign Minister Alberto Guani of Uruguay, as president of the conference, emphasized that the gathering had no isolationist aim but was designed to strengthen democracy and inter-American solidarity by establishing a firmer basis of cooperation among the Río de la Plata countries. This spirit of cooperation for mutual economic progress was maintained throughout the conference, despite the clashes of national interest occasioned by some of the proposals under consideration.

Brazil strongly opposed the Argentine proposal for the establishment of bilateral customs unions among the five countries. The suggestion was then changed to provide merely for study of a regional (multilateral) customs union, which had little chance of acceptance since it was strenuously opposed by Bolivia, Paraguay, and Uruguay. Argentina and Brazil rejected a Uruguayan proposal that the five countries grant each other preferences over

non-American countries in disposing of their export surpluses. The Bolivian proposal for free transit through the other countries of merchandise, materials, and passengers bound for Bolivia brought a protest from a Paraguayan delegate, who feared that Bolivia might employ the convention to import munitions. (Bolivia had imported arms and munitions through Chile under a similar clause in a Bolivian-Chilean commercial treaty during the Chaco War.) The issue was settled in the convention signed at Montevideo by making the free transit clause subject to the international obligations and the laws of the countries granting free transit. Many proposals on which agreement could not be reached were postponed for consideration at subsequent conferences.

For bilateral economic agreements among the participating republics, see ARGENTINA, BOLIVIA, BRAZIL, PARAGUAY, and URUGUAY under *History*. Also see INTER-AMERICAN UNION OF THE CARIBBEAN; PAN AMERICANISM.

REINDEER. See ALASKA.

REINSTATEMENT OF EMPLOYEES. See LABOR LEGISLATION; SELECTIVE SERVICE ADMINISTRATION.

RELIEF. The program of relief to needy persons, as it has developed in the United States since the first inauguration of President Roosevelt, falls into three distinctly separated categories, and it should be borne in mind that these three categories have entirely different types of administration, different sources of funds, and not altogether identical objectives. (1) There are the three special types of public assistance administered by the Social Security Board—old-age assistance, aid to dependent children, and aid to the blind—more commonly referred to as "social security" and financed by Federal grants-in-aid matching State funds to the extent that the legislation of the various States provides them. The Social Security Board also administers the unemployment insurance program, which serves to relieve the plight of the jobless, but is a form of insurance rather than public aid. For a description of these programs, see SOCIAL SECURITY BOARD. (2) The Federal work programs, designed to aid the needy by providing employment, are financed entirely by Federal funds. See the separate articles in this volume on the Federal agencies involved, namely, CIVILIAN CONSERVATION CORPS, NATIONAL YOUTH ADMINISTRATION, and WORK PROJECTS ADMINISTRATION. (3) General relief, which bears the closest resemblance to a "dole," is financed entirely from State and local funds.

The faults inherent in such division of administration continued to be the subject of study by interested groups in 1941. There were, on the one hand, advocates of a system of relief by which authority and responsibility for relief would be handed back to the States; this view has been consistently put forward by Republicans during consideration of the annual Congressional relief bills. On the other hand, there was the contention (eloquently supported at the 1941 meeting of the National Conference of Social Work in June by Edith Abbott, dean of the School of Social Administration at the University of Chicago) that the present "relief chaos" demands establishment of a comprehensive Federal relief program.

When statistics are lumped together for all phases of the program, the 1941 trend continues in the downward direction. Total payments and earnings for November, 1941, were \$160,384,000 as compared with \$209,235,000 for November,

1940; the unduplicated total of recipients fell to 10,271,000 (preliminary) from 14,577,000. However, the three types of special assistance under the Social Security Board, showed a steady increase as the States expanded their programs. Among the Federal work programs all showed a decrease except the out-of-school work program of the NYA. The CCC suffered most, with a decline in earnings of enrollees from \$18,725,000 in November, 1940, to \$9,572,000 in November, 1941; WPA funds dropped from \$93,545,000 to \$59,732,000. General relief, administered by States and localities, decreased to \$18,432,000.

Despite the obvious improvement in employment in 1941 (see LABOR CONDITIONS) the relief issue continued to be a lively one both in Congress and in State legislatures. The relief bill for 1942, as passed by Congress on June 30, just before the beginning of the fiscal year, provided a total of \$910,905,000, primarily for the WPA except for \$25,000,000 earmarked for buying surplus farm commodities under the Food Stamp Plan. This was a reduction of \$457,156,357 from the amount voted in 1940 (\$1,350,650,000) and was expected to reduce the WPA rolls to a million from the current enrollment of approximately 1,700,000.

The measure was the occasion for a sharp debate hinging primarily on the extent to which the defense program might be expected to reduce unemployment. WPA officials had estimated that 5,500,000 persons would be unemployed during the ensuing year and pointed out that defense work would necessarily be unevenly distributed. In line with this, larger appropriations were advocated by a number of Democrats. The Republican minority, while approving the cut, continued to strike hard against the mismanagement of relief. A particular object of the opposition attack was the employment of David Lasser as a field investigator of the WPA. Although Lasser had resigned the presidency of the Workers Alliance because of its Communist activities, opponents quoted him as having stated that the Communist party was not subversive. The appropriation, as passed, was slightly higher than the figure (\$886,000,000) recommended by the President in a special message to Congress on May 20. The message urged Congress—in vain—to remove certain requirements imposed in 1941: the limitation of continuous employment on the WPA to 18 months, investigation of each worker at least once a year, and the ineligibility of aliens for relief.

Opponents of a large relief program were determined that funds should feel the axe still further in 1942. The Congressional-Executive Department Joint Committee on Non-Essential Expenditures, headed by Senator Byrd of Virginia, recommended in its report on December 25 that the annual outlay for the WPA be reduced by about \$400,000,000. The Committee had before it a survey made by the National Economy League, showing that only 59 cents of the WPA dollar went to the relief workers, the remainder being used for supplies, administrative costs, etc.; the League advocated abandonment of work relief during the crisis and a return to a system of direct relief, with an estimated saving of \$479,000,000 for the fiscal year 1942. Four days after the report of the Byrd Committee was made public, the Brookings Institution released the results of a study financed by the Falk Foundation, in which curtailment of expenditures in the field of public welfare was advocated to the tune of \$615,000,000. Both the Byrd Committee and the Brookings report favored complete abolition of the CCC.

A stormy chapter in relief annals of recent years was closed in November, 1941, with the formal disbandment as a national organization of the Workers' Alliance, a left-wing group serving the interests of the unemployed and relief recipients. In the course of its ten-year existence, the Alliance had staged a hunger march on Washington, found 75 of its members ejected from the Capitol, and been instrumental in a widespread strike of relief workers. Reduction in unemployment was cited as the reason for disbandment; the 200 branches of the organization were instructed by the national board to affiliate with other labor groups and community organizations.

Developments in the field of general relief, and with regard to State participation in Federal programs, are discussed in the articles on States under *Legislation*. To an extent, the States reflected the national tendency to reduce the relief drain on their resources. Pennsylvania, for example, adopted a policy by which all single, employable persons between 20 and 40 were barred from relief after July 16. The laws of Indiana were amended to provide that indigents of the State receiving public support could be required to perform useful public work. For statistics on payments, see the articles on States under *Social Security*.

For farm aid, see AGRICULTURE and AGRICULTURE, U.S. DEPARTMENT OF. For privately sponsored activities in the field of public welfare, see the article on PHILANTHROPY.

RELIGIOUS BOOKS. See LITERATURE, ENGLISH AND AMERICAN.

RELIGIOUS FREEDOM. See ROMAN CATHOLIC CHURCH; UNITED STATES under *Foreign Affairs*.

RELIGIOUS ORGANIZATIONS. According to the 1941 *Yearbook of American Churches*, published under the auspices of the Federal Council of the Churches of Christ in America, 64,501,594 of the 131,669,275 persons in the United States (1940 census) belong to one or another of the 250 existing religious denominations. This represents an increase of 7.86 per cent in church membership during the past decade as compared with a 7.2 per cent increase in population. Of the total church members, 31,722,647 belonged to the larger Protestant bodies (having 50,000 or more members), 15,252,639 to the Roman Catholic Church, and 3,341,652 to the Jewish Congregations.

The table on page 568, reprinted from the publication cited above, lists in alphabetical order the religious bodies in the United States having 50,000 or more members. The 52 churches in this list comprise more than 97 per cent of the church membership in the nation, the remaining 3 per cent being found in 198 bodies. For more complete statistics on the larger churches, see the separate articles in this volume supplied by the officials of each. See also CATHOLIC WELFARE CONFERENCE; FEDERAL COUNCIL OF CHURCHES OF CHRIST; JEWISH WELFARE BOARD; and SOCIETIES AND ASSOCIATIONS under *Christian Endeavor, Sunday-School Union*, et cetera.

RENTS. See HOUSING AUTHORITY, U.S.; LIVING COSTS AND STANDARDS.

REORGANIZATION. See articles on States under *Legislation*, as COLORADO, INDIANA.

REPLACEMENT TRAINING CENTER SYSTEM. See MILITARY PROGRESS.

REPRESENTATIVES, U.S. House of. For a discussion of the activities of Congress in 1941 see UNITED STATES. Officers of the House at the beginning of

U.S. RELIGIOUS BODIES HAVING 50,000 MEMBERS AND OVER
 [Year Book of American Churches]

Name of Religious Body	Year	No. of Churches	Inclusive Church Membership	Membership 15 years of age and over
Seventh Day Adventists	1940	2,565	176,218	171,518
Assemblies of God	1940	3,930	198,834	198,834
Baptist Bodies.				
Northern Baptist Convention	1940	7,478	1,543,976	1,463,689, Est.
Southern Baptist Convention	1940	25,018	4,949,174	4,662,122, Est.
Natl. Baptist Convention U.S.A., Inc and Nat. Baptist Convention of America	1940	24,575	4,046,840	3,654,501, Est.
American Baptist Association	1936	1,064	115,022	93,955
Free Will Baptists	1940	1,102	118,871	117,130, Est.
Natl. Baptist Evangelical Life and Soul Saving Assembly of U.S.A.	1940	176	55,897	49,749, Est
Primitive Baptist	1936	1,726	69,157	68,881
Church of the Brethren (Conservative Dunkers)	1940	1,017	176,908	163,133, Est.
Church of Christ, Scientist	1936	2,113	268,915	268,915
Churches of God:				
Church of God (Cleveland, Tenn)	1940	1,602	63,216	61,320, Est.
Church of God (Anderson, Ind)	1940	1,428	74,497	62,727, Est.
Church of the Nazarene	1940	2,612	165,532	154,607, Est.
Churches of Christ	1936	3,815	309,551	309,551, Est.
Congregational Christian Churches	1939	6,041	1,049,575	1,022,287, Est.
Disciples of Christ	1940	7,974	1,658,966	1,537,862, Est.
Eastern Orthodox Churches				
Greek Orthodox Church (Hellenic)	1940	355	425,000	319,600, Est.
Russian Orthodox Church	1936	229	89,510	66,596
Serbian Orthodox Church	1940	35	100,000	75,000
Syrian Antiochian Orthodox Church of New York and All North America	1940	69	61,043	45,738
Evangelical and Reformed Church	1939	2,861	658,571	591,455, Est
Evangelical Church	1940	2,010	244,278	232,065, Est
Religious Society of Friends (Orthodox)	1940	600	68,000	55,750
Jewish Congregations	1936	3,728	4,641,184	3,341,652, Est.
Latter-Day Saints:				
Church of Jesus Christ of Latter-Day Saints	1939	1,499	724,401	512,028, Est.
Reorganised Church of Jesus Christ of Latter-Day Saints	1940	570	106,554	98,700, Est
Lutherans:				
American Lutheran Conference				
American Lutheran Church	1939	2,028	560,940	393,807
Evangelical Lutheran Augustana Synod of N.A.	1939	1,189	340,171	258,500
Norwegian Lutheran Church of America	1939	2,526	536,073	370,962
Lutheran Synodical Conference of N.A.				
Evangelical Lutheran Synod of Missouri, Ohio and other states	1939	4,205	1,277,097	912,729
The Evangelical Lutheran Joint Synod of Wisconsin and other states	1939	807	256,007	177,402
United Lutheran Church in America	1939	3,750	1,611,778	1,192,716
Mennonite Church	1940	495	51,304	49,663, Est.
Methodist Bodies:				
African Methodist Episcopal Church	1939	7,115	650,000	581,750
African Methodist Episcopal Zion Church	1936	2,252	414,244	332,376
Colored Methodist Episcopal Church	1940	4,000	365,000	315,000
The Methodist Church	1940	42,139	7,377,487	6,706,136, Est.
Polish National Catholic Church of Amer.	1936	118	63,366	47,921
Presbyterian Bodies				
Cumberland Presbyterian Church	1940	1,082	73,357	62,353
Presbyterian Church in the U.S	1940	3,487	532,135	494,886, Est.
Presbyterian Church in the U.S.A.	1940	8,619	1,971,364	1,892,510
United Presbyterian Church of N.A.	1940	853	187,470	180,622
The Protestant Episcopal Church	1939	7,074	1,996,434	1,420,171
Reformed Bodies				
Christian Reformed Church	1940	298	121,755	80,358, Est.
Reformed Church in America	1940	723	163,135	153,510, Est.
The Roman Catholic Church	1940	18,733	21,284,455	15,252,639, Est.
The Salvation Army	1940	1,647	238,357	104,676
Unitarian Churches	1940	380	63,745	63,745
United Brethren in Christ	1941	2,809	421,689	377,388
Universalist Church	1941	508	51,489	50,408, Est
Totals: No. of Bodies, 52		223,029	62,768,542	50,871,793

the second session, January, 1942, included Sam Rayburn, Speaker; John W. McCormack, Majority Leader; Joseph W. Martin, Jr., Minority Leader. Chairmen of some of the important standing committees were: Appropriations, Clarence Cannon, Mo.; Banking and Currency, Henry B. Steagall, Ala.; Foreign Affairs, Sol Bloom, N.Y.; Immigration and Naturalization, Samuel Dickstein, N.Y.; Labor, Mary T. Norton, N.J.; Military Affairs, Andrew J. May, Ky.; Naval Affairs, Carl Vinson, Ga.; Ways and Means, Robert L. Doughton, N.C.

REPUBLICAN PARTY. See UNITED STATES.
RESERVE OFFICERS' TRAINING CORPS (R.O.T.C.). See MILITARY PROGRESS; NAVAL PROGRESS; SCHOOLS.
RETAIL TRADE AND PRICES. See BUSINESS REVIEW; CONSUMERS' COOPERATIVES; MARKETING.

RÉUNION. A French colony, 420 miles east of Madagascar. Area, 970 square miles; population

(1938), 210,000. Chief towns: St. Denis (capital), 30,762 inhabitants (1936); St. Paul, 21,485; St. Louis, 19,195; St. Pierre, 17,924; Pointe-des-Galets, the principal port. Education (1938): 243 schools and 27,500 pupils. Chief products—sugar, rum, manioc, coffee, vanilla, and spices. Trade (1938): 263,900,000 francs for imports and 206,400,000 for exports (franc averaged \$0.0288 for 1938). Since the fall of the French Republic the government of Réunion has been under the control of the French government at Vichy, France. Governor, M. Truitart.

REVENUES. See PUBLIC FINANCE and articles there listed.
RFC. See RECONSTRUCTION FINANCE CORPORATION.
RHEOTRON. See PHYSICS.

RHODE ISLAND. A New England State. Area: 1,214 sq. mi., including 156 sq. mi. of inland water, but excluding Atlantic coastal waters, 14 sq. mi. Popu-

lation: (1940 census) 713,346. The urban population comprises 91.6 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 1.6 per cent (U.S. average, 10.2); elderly (65 years and over), 7.6 per cent. Rhode Island ranks 48th among the States in area, 36th in population, and first in density, with an average of 674.2 persons per square mile. The largest city and capital is Providence with 253,504 inhabitants. There are five counties and 15 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to James F. Rockett, Director of the Department of Education, there were 110,404 pupils enrolled in the public day schools of Rhode Island during the school year 1940-41, 62,856 in elementary schools and 47,548 in secondary (including vocational) schools. Teachers numbered 4,212 and received an annual average salary of \$1,730.28. Total current expenditures for the year were \$10,925,237.54; capital outlay, \$1,112,836 (excluding \$65,400 for evening schools).

Transportation. State highway mileage in 1939, including streets under State control, totaled 836, of which all was surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 189,717; 166,341 were private and commercial automobiles, 451 busses, and 20,717 trucks and tractor trucks. Gross motor-fuel consumption was 133,963,000 gallons. Net motor-fuel tax receipts were \$3,945,000, the rate being three cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$3,218,000.

Railways of all classes extended 194 miles (Dec. 31, 1939) .08 per cent of the total mileage in the United States. Class I steam railways accounted for 118 miles. There are four airports and landing fields in the State (one lighted field) and four seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 164 civil aircraft in the State and 321 airline transport, commercial, and private pilots (276 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 47,600, as compared with 46,700 acres in 1940. According to the latest census, there are 3,014 farms, valued at \$26,334,374, averaging 73.6 acres each. Farm population numbered 16,241 or 2.3 per cent of the total.

Manufacturing. The total value of manufactured products, according to the latest census (for the year 1939) was \$516,390,541. For details, see 1940 YEAR BOOK.

Mineral Production. The value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$980,916 or only .02 per cent of the total for the United States.

Trade. According to the 1940 census there were 762 wholesale establishments in Rhode Island, employing 7,430 persons, reporting net sales for 1939 of \$239,013,000 and annual pay roll of \$12,435,000. There were 10,485 retail stores with 30,149 employees, reporting sales of \$274,759,000 and pay roll of \$30,890,000. Service establishments numbered 3,938, employing 6,123 persons for \$6,098,000 per year, and reporting a business volume amounting to \$21,243,000. The leading business center of the State is Providence which reported wholesale sales of \$183,714,000, retail sales of \$131,159,000, and \$13,539,000 receipts for its service establishments.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons

in Rhode Island was \$16,610,000. Under the Social Security program, financed by Federal funds matching State grants, 6,976 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$20.40 (U.S. average pension, \$21.08); 3,730 dependent children in 1,305 families received average monthly payments of \$45.50 per family (U.S. average, \$32.73); and 84 blind persons received \$19.96 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 3,220 and received \$30.46 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 258 (\$17,000); NYA student work program, 1,765 (\$14,000); NYA out-of-school work program, 1,781 (\$38,000); WPA, 6,038 (\$381,000); other Federal emergency projects, 45 (\$4,000); regular Federal construction projects, 20,147 (\$3,243,000).

Legislation. The General Assembly convenes in regular session on the first Tuesday of January annually. It is composed of 44 Senators (25 Republicans and 19 Democrats in 1941) and 100 Representatives (41 Republicans and 59 Democrats). The following is a list of the more important measures passed at the January, 1941, session of the Legislature, as compiled for the YEAR BOOK by Mabel G. Johnson, Legislative Reference Deputy of Rhode Island.

Act creating a State Council of Defense and authorizing local and district councils

Amended Civil Service law, giving the Governor power to name a new commission, exempting 10-year employees from examinations, providing that 5-year employees retain their positions with only qualifying examinations, and substituting for the previous law requiring the appointment of the top eligible person, the choice of any one of the top three

Old Age Assistance monthly payments increased to \$40 a month maximum from \$30

Special Commission created to study tax and financial problems of the State and municipalities

Creation of a four-member bi-partisan State Board of Elections

A new Arrest Law

Act providing for the licensing of sale and manufacture of explosives

Act setting up a standard of 35 per cent butter fat on Grade A milk, a maximum bacteria count of 50,000 based on average of four counts, a 200,000 bacteria count on cream, and a 200,000 bacteria count on Grade B milk

Act giving Housing Authorities the right of eminent domain

Act providing for extension of the Food Stamp Plan throughout the State, under State administration, and taking in "low income groups" as well as relief recipients

Act banning the taking of striped bass less than 16 inches in length from the waters of the State or from the ocean within three miles of the shore

Act relating to the eradication of star fish by providing for a bounty upon such fish

Act providing that the State of Rhode Island may enter into an Atlantic States Marine Fisheries Compact.

Act creating the office of Public Defender.

Commission to investigate the employment problems of the Negro

Uniform Veterans' Guardianship Act.

Act eliminating 30 per cent food revenue requirement for Class B liquor establishments and the requirement that they be staffed and equipped to feed 25 persons at a time

Legalizing class A liquor licenses without reference to population ratios and allowing the State to fix retail prices, except for malt beverages.

A Rhode Island State Labor Relations Act establishing a Labor Relations Board (Baby-Wagner so-called).

Several amendments to Workmen's Compensation Law (see LABOR LEGISLATION)

Act relating to State wage payment and wage collection

Act authorizing and directing the director of public works to cooperate with the Federal Government in a highway program affecting national defense.

Act guaranteeing to persons entering armed forces maximum unemployment compensation of \$16 weekly upon their discharge, as long as they are unemployed or as long as their wage credits last.

Act providing that draftees shall be restored to governmental positions when training period is satisfactorily completed. See LABOR CONDITIONS under *Collective Bargaining*; LABOR LEGISLATION.

Finances. Total tax collections in Rhode Island for the fiscal year ending in June, 1940, were \$26,571,000. Total sales taxes amounted to \$5,249,000, including motor fuel, \$3,847,000. Taxes on specific businesses ran to \$6,842,000, unemployment compensation, \$9,782,000 (1941: \$10,767,000).

Cost payments for the operation of general government totaled \$20,786,000 in 1939, the latest year available. (Revenues for the general government for that year were \$26,253,000.) Cost of operation per capita was \$29.53. Total gross debt outstanding in 1941 was \$30,766,000, as compared with \$21,930,000 in 1932.

Officers and Judiciary. The Governor is J. Howard McGrath (Dem.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, Louis W. Cappelli; Secretary of State, Armand H. Cote; Attorney General, John H. Nolan; State Treasurer, Russell H. Handy; State Budget Director and Comptroller, Christopher Del Sesto. Chief Justice of the Rhode Island Supreme Court is Edmund W. Flynn; there are four associate members.

RHODES. See ITALIAN AEGEAN ISLANDS.

RHODESIA, Northern. A British protectorate in South Africa. Area, 290,320 square miles. Population (1938), 1,379,962, including 1,366,425 Africans, 13,000 Europeans, and 537 Asiatics. Chief towns: Lusaka (capital), Livingston, Broken Hill, Fort Jameson, Mazabuka.

Production and Trade. Maize, wheat, tobacco, coffee, oilseeds, citrus fruits, and teakwood are the main agricultural products. Mineral output (1939) included copper (215,065 met. tons), cobalt alloy (1,556 met. tons), silver (80,137 fine oz.), gold (4,645 fine oz.), vanadium (384 met. tons). Trade (1939): £4,521,082 for imports and £10,220,182 for exports including reexports (copper £8,904,112, cobalt £67,317, zinc £188,448, vanadium £286,644, tobacco £97,341, and wood products £109,402 were the main export items). Roads (1940): 8,175 miles.

Government. The budget estimates for 1940 indicated revenue of £1,864,686 and expenditure of £1,608,203. A governor, assisted by an executive council, administers the protectorate. There is a legislative council of 17 members (the governor as president, 5 ex-officio, 4 nominated official, and 7 elected unofficial). Governor and Commander-in-Chief, Sir John Waddington (appointed June, 1941).

History. It was announced in the British House of Commons on Dec. 11, 1940, that the government had decided (within war limits of man power and materials) to proceed in 1941 with the full program of the Five-Year Plan which included the construction of African housing (£31,000), African schools in the Copperbelt (£14,000), African hospitals and dispensaries (£10,000), and loans to local authorities, mainly for African housing (£50,000).

In a summary of the recommendations of the Commission appointed to inquire into the disturbances of 1940 in the Copperbelt of Northern Rhodesia and the local government's decisions concerning them it was stated that the African mine-workers were to receive a general increase in initial rates of pay and a revision of wage rates, bonuses, and cost-of-living allowances. There were to be advances in regard to the method of collective bargaining, the handling of labor questions, and in the

provision for education, recreation, and general welfare. The full report made public later revealed that part of the moral responsibility for the rioting was caused by those Europeans at Mufulira and Mkana belonging to the Northern Rhodesia Mine Workers' Union who broke their agreement and went on strike.

It was announced in March that a war tax of £1 per head would be paid by every white person in the territory, and the total amount received given to the British government for war purposes. Thirty-five of the 39 German missionaries in Northern Rhodesia were confined to their mission stations, and the other 4 were subject to supervision in their movements. The Import Control Measure which went into force on May 3, 1941, prohibited the importation of goods unless admission was authorized by open general import license or a special import license has been issued by the comptroller of the currency.

Munitions made in the machine shops of the Copperbelt mines were accepted by the Southern Rhodesia War Supplies Board and found to be of 100 per cent quality. An arbitration award set a price of £153,985 to be paid by the government to the North Charterland Exploration Co. for 3,776,741 acres of land in northeastern Rhodesia. See RHODESIA, SOUTHERN and TANGANYIKA under *History*.

RHODESIA, Southern. A British self-governing colony in South Africa. Area, 150,333 square miles. Population (June 30, 1940, estimate), 1,435,560, including 1,367,000 natives, 62,330 Europeans, and 5,960 Asiatics and colored. Chief towns: Salisbury (capital), 32,846 inhabitants in 1936; Bulawayo, 29,126; Umtali, Gwelo, Gatooma, Que Que, Eiffel Flats, Shabani, Fort Victoria. Education (1939): 124,000 students in schools of all kinds.

Production and Trade. Maize, wheat, cotton, tobacco, groundnuts, and fruits are the chief agricultural products. Livestock (1939): 2,326,038 cattle, 302,391 sheep, and 132,074 swine. Dairy products (1939): 1,798,456 gal of milk, 861,516 dozen eggs, 1,449,007 lb. of butter, and 355,844 lb. of cheese. During 1940 there were produced 826,485 fine oz. of gold and 186,080 fine oz. of silver. Other metals (with 1939 production figures) were chrome ore (139,083 met. tons), asbestos (52,900 met. tons), tin (451 long tons, metal content), tungsten (270 met. tons), nickel (490 met. tons). Trade (1940): £7,716,000 for imports and £13,404,000 for exports.

Communications. In 1940 there were 1,361 route miles of railway and 1,588 route miles of supplementary road motor service in operation; 12,557 miles of roads; and 2,769 route miles of airways linking the important towns and including a service to Beira, Mozambique.

Government. Budget (1941-42): £6,242,102 for revenue and £8,852,749 for expenditure. Revised budget (1940-41): £5,570,554 for revenue and £9,276,954 for expenditure. On Mar. 31, 1941, the total public debt was £17,055,841. The government is administered by a governor, assisted by an executive council. There is a legislative assembly of 30 members elected for a five-year term by British subjects over 21 years of age, subject to certain qualifications (23 Unionists and 7 Laborites were elected on Apr. 14, 1939). In October of 1937 a law (authorized by the constitution) was passed providing for the establishment of native councils in native reserves, representative of the local chiefs and native residents, to advise the governor and manage certain local affairs. Governor and Com-

mander-in-Chief, Sir H. J. Stanley (appointed in 1934; term extended to Jan. 7, 1942); Premier, Sir Godfrey Huggins (Unionist).

History. On Feb. 19, 1941, it was announced that a contingent of pilot officers who had completed their training in Southern Rhodesia had arrived in Great Britain and were the vanguard of a stream of men who will form the Rhodesian squadrons of the R.A.F. A meeting of representative officials met at Salisbury on Oct. 18, 1941, to discuss arrangements for the agenda of the conference on amalgamation between the two Rhodesias and Nyasaland to be held early in 1942. The subjects for consideration included the constitution of the joint territory and parliamentary machinery, native representation, means of decentralizing government, and finance. See NYASALAND and TANGANYIKA under *History*.

RICE. The rice crop in the United States in 1941 was estimated by the U.S. Department of Agriculture to total 54,028,000 bushels from 1,245,000 acres versus 54,433,000 bushels in 1940 from 1,069,000 acres, and compared with the 1930-39 average of 45,673,000 bushels and 942,000 acres. Early season prospects for a record crop were upset by a Gulf hurricane in September, and unfavorable conditions in California. Acre yields averaged 43.4 bushels in 1941, 50.9 bushels in 1940, and 48.4 bushels over the 10-year period. Yields in producing States were for Louisiana 19,906,000 bushels, Texas 13,600,000, Arkansas 11,342,000, and California 9,180,000 bushels. The season average price per bushel (preliminary) received by farmers was 118.5¢ and the value of production was estimated at \$63,997,000 compared to 81.2¢ and \$44,208,000 in 1940.

The 1941-42 crop of rough rice in other countries was estimated for China 2,327,000,000 bushels, Japan 541,000,000, Chosen 216,000,000, Taiwan 83,000,000, Manchuria 40,000,000, Spain 13,669,000, Peru 6,190,000, and Mexico 5,405,000 bushels. The 1940-41 crop of Burma was 401,625,000 bushels, Argentina 2,743,000, and Uruguay 1,086,000 bushels.

RIOUW-LINGGA. See NETHERLANDS INDIES under *Area and Population*.

RIVER PLATE, Regional Conference of the. See REGIONAL CONFERENCE OF THE RIO DE LA PLATA.

RIVERS. See BRIDGES; FLOOD CONTROL; WATERWAYS, INLAND.

ROADS AND STREETS. During the year ending June 30, 1941, a total of 11,724 miles of Federal-State highways was improved. Eliminations of railway-highway grade crossings in 1940-41 totaled 321, besides which 65 obsolete grade crossing structures were rebuilt and protective devices installed at 941 crossings. Most of the highway improvements consisted of widening and strengthening road surfaces, reducing curves and grades. Of the roadways improved, a total of 2,244 miles were merely graded and drained; 1,073 miles were sand-clay surfaced, of which about three-fourths were treated to give increased stability; 3,815 miles were gravelled, of which a little over half were treated; 370 miles were macadamized, most of which was treated; 2,401 miles were surfaced with bituminous mix, macadam or concrete; 1,741 miles with Portland cement concrete; 9.4 miles with block; and 56 miles were made up of bridges and their approaches. Grade separation totaled 10 miles. The highest total mileage of highway improved in any one State was 858 in Iowa. Next came 805 in Texas and 725 in Minnesota. In Hawaii and Puerto Rico

the mileage was 15 and 29. The entire cost of the work outlined was \$283,880,000, of which \$155,909,000 was met from Federal funds. The States matched outlays for main and secondary highways.

Improvement of a route from Chicago to Springfield, Ill., 204 miles long, was completed late in the year. Tentative plans for a superhighway from Boston to Washington, 405 miles, were carried forward. Twelve traffic lanes have been proposed through regions of the densest traffic. (*Engineering News-Record*, Apr. 10, 1941.) Plans for a 60-mile belt-line defense highway around Indianapolis, were approved late in the year by the Indiana State Highway Commission. The plan had been endorsed by the Indianapolis office of the PRA.

Up to September, toll superhighways had been authorized by the legislatures of Maine, New York, Maryland, Florida, and Illinois. Similar legislation had been defeated in New Jersey, Wisconsin, Missouri, and Oklahoma.

Mexico allotted \$23,000,000 for highway construction in 1942. Of this amount it was expected that \$10,000,000 would be provided by the Export-Import Bank of Washington, D.C. Preference will be given to completion of the part of the Pan American highway running to the border of Guatemala. A 24½-mile highway through the tropical jungles of Panama, connecting Colon with the present highway from Panama City to the Madden Dam, is being constructed by the United States to improve the defense facilities of the Panama Canal. (*Engineering News-Record*, July 17, 1941; New York.) In Paraguay, American engineers and contractors, using American equipment, are building the first modern highway in that country. It will be a major link in a highway across Paraguay to Brazil. Surveys were begun in December, 1940. A loan from the Export-Import Bank, Washington, D.C., is expected. (Durham, "Road Construction in Paraguay," *Engineering News-Record*, June 5, 1941; New York.)

The accompanying table shows latest statistics for highways and motor vehicle registrations in the Western Hemisphere. Statistics by States will be found in the articles on the States under *Transportation*; for the rest of the world, see YEAR BOOK for 1940. See BRIDGES; ILLUMINATION; MOTOR VEHICLES; RAPID TRANSIT; TRANSPORTATION DIVISION; TUNNELS; articles on countries and States under *Transportation*.

HIGHWAYS OF THE WESTERN HEMISPHERE

Continent or Country	Road mileage 1940	Area to 1 mile of road	Motor Vehicles Jan. 1, 1941
AMERICA—Total	4,243,470	3 8	33,350,828 *
Argentina	253,115	4.6	309,500
Brazil	129,057	25.4	174,000
Canada	599,040	7.6	1,477,282
Chile	22,613	12.4	50,269
Colombia	14,336	34.7	33,143 *
Cuba	2,214	19.9	46,817
Ecuador	3,311	52.7	3,903
Guatemala	3,786	11.2	4,824
Jamaica	6,914	0.6	11,629
Mexico	56,923	13.5	105,470 *
Newfoundland	6,159	6.9	5,538
Nicaragua	1,550	31.7	907
Panama & Canal Zone	870	37.2	12,081 *
Peru	16,559	31.6	24,554
Puerto Rico	1,441	2.4	27,030
Salvador, El	3,709	3.5	3,411
United States	3,065,000	1.0	32,462,861
Uruguay	22,487	3.2	45,765
Venezuela	5,882	67.0	35,534

* As of Jan 1, 1940.

Bibliography. Halsey, *Traffic Accidents and Congestion* (New York and London); Hammond and Sorensen, editors, *Traffic Engineering Handbook* (New York); Ives, *Highway Curves* (New York).

M. N. BAKER.

ROCKEFELLER FOUNDATION, The. An organization chartered in 1913 for the permanent purpose of "promoting the well-being of mankind throughout the world." The present program is concerned with certain definite problems in the medical, natural, and social sciences, the humanities, and public health. For work in these fields the Foundation appropriated in 1941 approximately \$9,000,000. A statement of representative grants follows.

Medical Sciences. The purposes for which funds were provided in the field of the medical sciences in 1941 include the teaching of public health and preventive medicine in medical schools, development of tropical medicine, and teaching and research in psychiatry, neurology, endocrinology, and cancer and allied diseases. Among the appropriations for such work were: \$600,000 to Cornell University Medical College for endowment of the Department of Public Health and Preventive Medicine; \$200,000 to Tulane University for the development of the Department of Tropical Medicine; \$168,000 to the National Research Council for the support of the Welch Fellowships in internal medicine; \$150,000 to the National Research Council toward the support of the work of the Committee for Research in Problems of Sex; \$150,000 to Washington University, St. Louis, for the support of a Department of Neuropsychiatry, \$150,000 to the University of Chicago for teaching and research in psychiatry; \$120,000 to the Memorial Hospital for the Treatment of Cancer and Allied Diseases for the support of research, teaching, and professional care, \$80,000 to Dartmouth College for research in physiological optics; \$25,000 to McGill University for research in endocrinology; and \$20,700 to the University of Edinburgh for research in psychiatry, neurology, and neurosurgery.

Natural Sciences. The program in the natural sciences was concerned almost entirely with experimental biology. Among the appropriations in this field in 1941 were \$76,000 to the University of Rochester for cooperative research in the Medical School and the natural science departments of the College, using radioactive and stable isotopes for investigation of biological and medical problems; \$52,000 to the University of Minnesota for research with radioactive and heavy isotopes as tracers of fundamental biological processes; \$75,000 to Cornell University for research in the Department of Biochemistry; \$70,000 to the Massachusetts Institute of Technology for the development of an electron microscope in the Division of Biological Engineering as an instrument for research in the biological and the medical sciences; \$65,000 to Stanford University for the development of an electron microscope; \$60,000 to Cornell University for research in nutrition as related to aging and longevity; \$48,500 to the Johns Hopkins University for research in nutrition, \$30,000 being for use in the School of Medicine, and \$18,500 in the School of Hygiene and Public Health; \$40,000 to the California Institute of Technology for research in chemistry in its relation to biological problems, \$34,520 to the University of Texas for research in genetics of *drosophila*; and \$280,000 to the National Research Council for its administrative budget and for the support of conferences, committees, special studies, and fellowships.

Social Sciences. In the social sciences the emphasis was on projects contributing not only to the understanding of important social problems but also to the development of personnel and methods. Appropriations in 1941 included \$200,000 to the Social Science Research Council for conferences and planning, grants in aid, and fellowships; \$150,000

to the University of Chicago for research in the Division of Social Sciences; \$103,700 to the Council on Foreign Relations for support of study groups and research in problems involved in the peace settlement which will follow the present war; \$70,000 to the National Bureau of Economic Research for its program of financial research; \$51,500 to Yale University for research in the Institute of International Studies; \$50,450 to the University of Minnesota for study of employment and unemployment; \$50,000 as a special grant in aid fund in the social sciences to be allocated to institutions and individuals for studies in Latin American countries; \$35,000 to the University of Minnesota for analysis of family and individual income in Minnesota; \$30,000 to the Massachusetts Institute of Technology for research in the Industrial Relations Section, \$20,000 to Dalhousie University for training and research in public administration.

Humanities. The program in the humanities was concerned with the means, such as museums, motion pictures, radio, drama, and libraries, by which cultural levels of contemporary society are being influenced, and with the promotion of better international understanding through cultural interchanges. In 1941 the American Council of Learned Societies received the following grants: \$170,000 for microfilming scholarly materials, \$100,000 for planning and development, fellowships, and the work of its Committee on Far Eastern Studies, \$50,000 for the development of personnel and resources for teaching living oriental languages, \$50,000 for the expenses of special intensive instruction in Chinese, Japanese, and Russian languages, and \$25,000 for a summer institute for intensive study of Spanish and Portuguese languages, a grant of \$60,000 went to Columbia University for its Office of Radio Research, \$28,800 to the Library of Congress for studies of communication trends in wartime; \$20,000 to the Museum of Modern Art for the study of films in wartime communication, \$15,960 to the New School for Social Research for the study of totalitarian communication in wartime; \$15,000 to the University of Michigan for teaching English to advanced students of Spanish American background; \$12,500 to the Buffalo Museum of Science for advisory service and training of personnel in national museums of South and Central America; and \$10,000 to the Library of Congress for assistance to South and Central American libraries.

Public Health. The Foundation appropriated \$2,000,000 for the work of its International Health Division in 1941. This work included research on a number of selected diseases, among them, yellow fever, malaria, tuberculosis, influenza, the common cold, rabies, syphilis, and diphtheria; demonstrations in the control of certain of these diseases in their environments; cooperation with governments in the organization or improvement of important services of central or local health departments; and the development of public health education. In addition a grant of \$75,000 was made to the National Health Council for a study of private health agencies, and \$250,000 was appropriated for the use of the International Health Division in supporting the activities of The Rockefeller Foundation Health Commission in European and other countries severely affected by war conditions.

Officers. The executive officers of the Foundation in 1941 were Walter W. Stewart, chairman of the board of trustees; Raymond B. Fosdick, president; Thomas B. Appleget and Selskar M. Gunn, vice-presidents; Alan Gregg, M.D., director for the medical sciences; Warren Weaver, director for the

natural sciences; Joseph H. Willits, director for the social sciences; David H. Stevens, director for the humanities; Wilbur A. Sawyer, M.D., director of the International Health Division; Norma S. Thompson, secretary; Edward Robinson, treasurer; George J. Beal, comptroller; Thomas M. Debevoise, counsel; and Chauncey Belknap, associate counsel. The offices of the Foundation are at 49 West 49th Street, New York.

ROCKY MOUNTAIN FEVER. See PUBLIC HEALTH SERVICE.

RODENT CONTROL. See CIVILIAN CONSERVATION CORPS; FISH AND WILDLIFE SERVICE.

ROMAN CATHOLIC CHURCH. With war reaching the United States, the Catholic Church accelerated and made available its facilities and influence for the welfare of the American people at large. The International Catholic Office for Refugee Affairs was merged with the Catholic Committee for Refugees. The Bishops contributed \$50,000 to the Commission for Polish Relief. The American Catholic Committee for British Catholic Relief donated \$10,556

A September War Department tabulation estimated that 31 per cent of the Army personnel was Catholic. August figures revealed 362 Catholic Army chaplains were actively on duty. The National Catholic Community Service, one of the six USO organizations, by the end of the year was operating 80 clubs for service men and 15 centers for women in defense work conducted by the Women's Division. There were 194 staff workers in the field.

The *Official Catholic Directory* for 1941 gave 22,293,101 as the total Catholic population of the United States, Alaska, and the Hawaiian Islands, an increase of 889,965 over the previous year. There were 35,839 priests, diocesan and regular, 152,159 professed Sisters, and 7,762 professed Brothers. A new Ecclesiastical Province was established—Denver—and two new dioceses created—Honolulu and Pueblo. The changes brought the total of Ecclesiastical Provinces in the United States to 20. Two Bishops were made Archbishops and seven priests elevated to the Episcopate. Two members of the Episcopate died—Bishop Theodore Reverman, Fourth Ordinary of Superior, and the Most Rev. Vincent Wehrle, O.S.B., retired Bishop of Bismarck. Concern following America's entry into the war was felt for American Catholic missionaries in the new war zones. It was reported there were 1,200 American Catholic missionaries in the Pacific areas of hostility.

Cardinal O'Connell, of Boston, observed the thirtieth anniversary of his elevation to the Sacred College, while Cardinal Dougherty, of Philadelphia, was named Papal Legate to the Eucharistic Congress in the Twin Cities and made a tour of several South American countries. Three dioceses held Synods, the first such meetings in two of them, Fargo and Toledo, and the fifth in Sioux City. Observances commemorating anniversaries of the great Social Encyclicals, "Rerum Novarum" and "Quadragesimo Anno," were held throughout the country. Thousands of copies of the Encyclicals were distributed.

Many other centenaries and anniversaries were noted, including: the golden jubilee of the Diocese of Salt Lake; the tercentenary of the Sulpician Fathers and the one hundred and fiftieth anniversary of their arrival in America and the founding of St. Mary's Seminary, Baltimore; the centenary of Fordham University; the centennial of the Sisters of the Holy Cross; the tercentenary of Catholicism

in the Northwest and the centenary of the first Mass in Minnesota; the golden jubilee of the Sisters of the Blessed Sacrament for Indians and Colored People, the two hundredth anniversary of the approval of the Passionist Fathers

Principal event among the religious Orders in the country was the transfer to Washington of the Generalate of the Congregation of the Holy Cross from the University of Notre Dame, where it had been located for 35 years. The National Organization of Decent Literature continued its activities to purge publications of obscenity and was aided greatly in its work by campaigns led by municipal officials in many places against indecent reading matter. Through the Legion of Decency, the Church redoubled its efforts for clean motion pictures, as a revival of cinema lewdness was reported gaining. The Revised New Testament was completed and distributed under the sponsorship of the Confraternity of Christian Doctrine. More than a half million copies were sold by September following the release of the new version in June.

National Catholic Welfare Conference. The National Catholic Welfare Conference engaged in many activities, increased by the stepping-up of the national defense program and the spread of the war. Outstanding work of the Administrative Board was the coordination of Catholic war relief efforts under the Bishops' Relief Committee. Conducting a single fund-raising campaign by letters and special coast-to-coast broadcasts, the Committee urged Passion Sunday as a day for the collection of relief funds in Catholic churches throughout the nation. Meanwhile, the Bishops' Committee reported that, as of March 5, a total of \$312,587 96 had been expended in extending relief to refugees of Poland. The Committee presented \$5,000 to the American Red Cross for the relief of the suffering in China, and in August announced that funds totalling \$245,000 had been allocated, of which \$93,000 was to be sent abroad for relief, and \$152,000 expended in this country on refugee and war relief. The cornerstone for the new headquarters building in Washington was laid in August and a competition inaugurated to secure the model for the statue of Christ the Light of the World, which will be located in the facade of the new building.

The Administrative Board, elected at the 1941 Meeting of the Hierarchy, met and organized as follows: Archbishop Edward Mooney of Detroit, Chairman; Archbishop Samuel A. Stritch, of Chicago, Vice-Chairman and Treasurer; Archbishop Francis J. Spellman, of New York, Secretary. Chairmen elected were: Department of Education Archbishop John T. McNicholas, O.P., of Cincinnati; Department of Catholic Action Study Archbishop John G. Murray, of St. Paul; Department of Lay Organizations Bishop John F. Noll, of Fort Wayne; Press Department Bishop John M. Gannon, of Erie; Legal Department Bishop Hugh C. Boyle, of Pittsburgh; Youth Department Bishop John A. Duffy, of Buffalo, Social Action Department Bishop Edwin V. O'Hara, of Kansas City. The Rt. Rev. Msgr. Michael J. Ready was again appointed General Secretary and the Rev. Dr. Howard J. Carroll Assistant General Secretary.

The Pope. Pope Pius XII repeated his pledge that he would never cease, "in work and prayer, to do all that is possible to hasten the return of peace." This promise he fulfilled daily, in exhortations, in audiences, in calls for prayer, in his active solicitude for "the victims of warfare." Through the Vatican's Office of Information on War Prisoners, the Pope labored to reunite, at least by the reestablishment of communications, war prisoners and their fam-

ilies; engaged in enormous activity to bring relief to the victims of the war, particularly the Poles, but always without regard for nationality; distributed sums through Church representatives in various countries for aid to the needy and impoverished; instructed Papal representatives in all war-torn countries to visit prisoners and bring them consolation. The Pope was grateful for the aid sent by American Catholics, which constituted the major portion of his fund for the relief of the Polish people.

The Vatican. The Sacred College of Cardinals, 17 short of its full complement, was further reduced by the deaths of Cardinals Kaspar, of Prague, Schulte, of Cologne, and Lauri, Grand Penitentiary. While many causes were discussed and advanced, only one Beatification took place—that of Blessed Magdelene di Canossa, Foundress of the Daughters of Charity. However, two canonizations were decided upon by the Congregation of Rites—those of Blessed John of Britto, Portuguese Jesuit martyr of the seventeenth century, and Blessed Bernardino Realini, Italian Jesuit who died in 1616.

The Holy See maintained diplomatic relations with 35 other nations, as of December, 1940. The list of accredited diplomats included Myron C. Taylor, President Roosevelt's personal representative at the Vatican. Two important international agreements between the Vatican and other States were concluded. Foremost was the agreement signed at Madrid regarding the appointment of Bishops. The freedom of the Vatican in the choice of new members of the Spanish Hierarchy was assured. A convention between the Holy See and Haiti regarding the administration of church properties was ratified.

Like the Pontiff, the various Congregations and agencies of the Holy See functioned at an almost unprecedented pace. There were 1,730 separate ecclesiastical jurisdictions throughout the world, including 1,218 residential Sees, 54 abbeys and prelatures nullius, 485 vicariates and prefectures apostolic and independent missions. Orders and Congregations of the Pontifical Rite had 789,338 members.

The Sacred Roman Rota reported that it had affirmed the nullity of marriages in only about one fourth of the cases which were before it. Decisions were given in 80 cases, of which 76 involved the question of nullity.

Education. Bishop Joseph M. Corrigan was reappointed Rector of the Catholic University of America for a term of five years. The faculty of the School of Sacred Theology of the Catholic University of America was enlarged to meet the additional demand for clerics occasioned in part by the need to replace those who have joined the armed forces as chaplains.

Three new Catholic colleges were established—Gannon College in Erie, Mercy College in Detroit, and Barry College in Miami. St. John's University Law School, Brooklyn, absorbed the New York Law School. The new \$3,000,000 Cardinal Hayes Memorial High School was opened. The Catholic Summer School of America marked its golden jubilee. Cardinal O'Connell purchased and presented the Louis K. Liggett estate to adjoining Boston College. Dr. George H. Derry was named President of St. Joseph's College, Portland, Me., and Dr. John L. McMahon, of the Catholic University, was named President of Our Lady of the Lake College, San Antonio. The five Summer Schools of Catholic Action drew an attendance of 6,643. A total of 132 inter-American scholarships were awarded last school year and 109 new scholarships were awarded by 144 Catholic institutions of higher learning.

Pacific Area. The spread of the war in the Pacific brought further difficulties for the Church and her missions. Prior to the outbreak between Japan and the United States, the Nipponese Government legally recognized the Catholic Church in Japan, although it adopted a "non-foreign policy." The Holy See, in 18 decrees, adapted the Church to the new Japanese policy and entrusted all ecclesiastical districts to native clergy. Other present theaters of war in the Pacific—Indo-China and Thailand—had already presented mission difficulties. Hostilities between Indo-China and Thailand hampered mission work, but the apostolate was resumed after those disturbances were settled. The Far Eastern War threatened to impede mission work again.

Although China struggled for the fifth consecutive year to repel the Japanese forces, Archbishop Mario Zanin, Apostolic Delegate, reported to the Holy See a promising picture of Church progress in that invaded nation. Conversions for the year covered to August totalled 103,900 and seminarians increased from 6,713 to 7,028. Missionaries continued their work under constant air-raid dangers and many were killed. More church property also was destroyed and damaged, in air-raids, notably St. Mary's Cathedral in Chungking.

The Dutch East Indies aided Catholic mission schools faced with the necessity of closing for economic reasons. Up to the Pacific war the 601,570 Catholics had made the Church in the Dutch East Indies practically self-supporting. Siam adopted the Gregorian Calendar after a long dispute over such a reform.

Spain Despite reported Nazi pressure, Spain remained aloof from involvement in the war. The nation went about the work of religious, material, and social reconstruction. Among activities in the country were: Conclusion of the agreement with the Holy See concerning the nominating of ecclesiastics for vacant episcopal sees; celebration of the fourth centenary of the Society of Jesus; observance of the Social Encyclical anniversaries; formation of a national society to speed up the reconstruction and repair of churches destroyed or damaged in the civil war; enlisting of Catholic Action groups to aid in the evangelization of the "Red Belt" in Madrid; decrees for the protection of the family and the closing of all birth control centers; organization of Catholic men affiliated with Catholic Action, particularly the Association of the Fathers of Families, to cooperate with ecclesiastical and civil officials in the rejuvenation of the spiritual and social life of the nation.

Poland. Poland suffered in the East and the West, at the hands of both German and Russian invaders. The Nazis matched Soviet terrorism with wholesale persecution, including confiscation and executions, in which, it was reported, in August, 330 priests were shot and 1,000 died in prison. Reports of conditions in Poland were made by Cardinal Hlond, Primate of Poland, to the Vatican. Ignace Jan Paderewski died in the United States in July.

Germany. Expansion of the Reich's war efforts in no sense minimized the prosecution of the Nazi war on Christianity. Archbishop Conrad Groeber, of Freiburg-im-Breisgau, in a pastoral letter, declared the war had increased the ills of the Church in the Reich. The Archbishop's letter was one of several open statements by German prelates charging Nazi determination to obliterate the Church in the Reich. The Hierarchy of Germany, in a published statement, protested the oppressive measures against the Church and called upon the faithful to remain staunch in their faith. Denunciation by Bishop Clemens August Count von Galen, of Muenster, of

methods used by the Gestapo caused a sensation throughout Germany and the occupied territories. The denunciation occurred in a series of sermons, which were among the most momentous utterances of a German prelate since the outbreak of the war. In July, Bishop Franz Bornewasser, of Trier, had protested against Gestapo expulsion of religions.

In late summer Nazi officials were reported to have begun a systematic suppression of the few remaining Catholic publications of Germany; it was revealed the Nazis had confiscated 14 monasteries and schools of the German missionary Society of Steyl, depriving 340 priests, 500 theological students, 1,650 lay Brothers, and 2,200 students of homes and support; an internationally-known Catholic emigrant-aid organization, St. Raphael's Verein, was dissolved and many of the priests arrested; all houses of the Benedictine Missionary Congregation of St. Ottilian were closed; the famed Maria-Laach, Benedictine monastery in the Rhineland, was taken over by German authorities, 10 other Benedictine abbeys were dissolved, and a further six "evacuated." By the end of the year it was reported that 74 abbeys, seminaries, convents, houses of study and other establishments were wrenched from Catholic religions, more than 25 Orders being affected.

Mexico. Many things happened in Mexico that were heartening to Catholics of the world. Early in the year President Avila Camacho's administration proposed legislation to amend the notorious Article 3 of the Constitution, the Socialist Education measure. Educational reforms generally were sought by such bodies as the National Action Assembly, the National Union of Parents, and a group of forty high ranking military officers, framers of the Constitution and chiefs of the Revolutionary Party. In an August press interview, President Avila Camacho promised the educational problem would be settled before the end of the year and that "freedom of conscience and respect for family creed" would be guaranteed in the process. The President's address at the opening of Congress in September was marked by emphasis on the need for resurgence of spiritual values in the world. Another important event was the decision of the Supreme Court that the Education Law of 1935, enabling act of Article 3, was unconstitutional.

Canada. An appeal of Cardinal Villeneuve, Quebec, for unity and the celebration of a "Victory Mass" gave further impetus to Catholic war work in Canada. The Knights of Columbus and the Catholic Women's League led the Catholic laity in assisting the men in the armed forces, which had 200 Catholic chaplains in September.

Latin America. The Prefecture of the Bahamas was elevated to the rank of a Vicariate with the Most Rev. John B. Kevenhoerster, O.S.B., as Vicar Apostolic. Haiti inducted a new President, the former Catholic Minister to the United States, Elie Lescot. Over protests of the Hierarchy, the Nicaraguan Congress enacted a law giving preference to civil marriages over religious ceremonies and making civil marriages compulsory. Archbishop Louis Centoz, former Apostolic Nuncio to Lithuania, was named Nuncio to Costa Rica, Nicaragua, and Panama.

Outstanding event in the ABC countries of South America was the National Eucharistic Congress in Santiago, Chile, attended by a half million Catholics from all parts of South America, and even the United States. Cardinal Copello of Buenos Aires, was Papal Legate to the Congress, which was climaxed by a radio address by the Pope. The Chilean Hierarchy issued an important decree im-

posing excommunication upon those guilty of perjury in processes seeking annulment of civil marriage contracts. The Argentine Hierarchy issued a joint pastoral urging a Crusade of Good Will in the interest of the working classes. Catholic Action, inspired by the Encyclical anniversaries, petitioned the Chamber of Deputies for a new law that would assure family allocations to all wage-earners. The new Catholic University of Brazil in Rio de Janeiro, opened.

The vexing problem of religious instruction in Venezuelan schools showed definite improvement. Both Church and State intensified efforts to instill religious principles in youth. A Catholic radio station, "The Voice of the Country," was inaugurated in commemoration of the Encyclical Jubilees and the silver episcopal jubilee of Archbishop Felipe Rincon Gonzalez, of Caracas. In December, the Ecuadorian Government conferred the Grand Cross of the National Order of Merit on Archbishop Carlos Maria de la Torre, of Quito.

England. German bombs destroyed many religious institutions in England. Amid the ruins sprang up a movement named the Sword of the Spirit, initiated by Cardinal Hinsley, of Westminster, to unite all Christians in defense of Christianity against the aggressive paganism of dictator countries and to lay the foundations for a peace based on the five points of the Holy Father's program. In Lenten pastorals, the Bishops of England and Wales dealt with the problems, social and economic, that would be faced after the war and urged that Christian principles be chosen for the solution. The Catholics of England joined with their fellow countrymen in the National Day of Prayer and themselves set aside a week for prayer and penance. In April the British Ministry of Information announced that 2,659 churches in Britain had been hit, 714 destroyed or seriously damaged, and 1,945 damaged less seriously. Of the destroyed buildings 58 were Catholic. Hundreds of priests and Catholic laity died in the air raids. The British Catholic Directory showed the Catholic population of England and Wales to be 2,414,000, an increase of 7,583 over the previous year. The Scottish Catholic Directory disclosed that the Catholic population of Scotland was 614,469.

Italy. The English, Scots, and Beda Colleges in Rome, vacated just before Italy entered the war, were taken over by Italian authorities, the first as a military hospital and the other two as shelters for child refugees from Africa. Genoa's Cathedral was damaged in a bombardment and closed. The celebration of national holidays, holy days, and civil solemnities was suspended by decree of the Italian Government for the duration of the war. The Sacred Congregation of Seminaries and Universities suffered a heavy blow when fire destroyed the Pontifical Seminary at Catanzaro.

See BELGIUM, CANADA, COSTA RICA, FRANCE, GERMANY, HUNGARY, IRELAND (NORTHERN), ITALY, MEXICO, NETHERLANDS, POLAND, SPAIN, and YUGOSLAVIA, under *History*; VATICAN CITY.

ROOSEVELT, Franklin Delano. See UNITED STATES under *The President*; also, ATLANTIC DECLARATION; GREAT BRITAIN; RADIO PROGRAMS. For the **PRESIDENT'S BIRTHDAY BALL**, see PHILANTHROPY.

ROSE ISLAND. See SAMOA, AMERICAN.

ROSS DEPENDENCY. See NEW ZEALAND.

ROUMANIA. See RUMANIA.

ROWING. The eight-oared crews of the University of Washington and Harvard University rowed supreme in 1941. The huskies from the Far West conquered everything in sight and wound up win-

ners of the Poughkeepsie Regatta. Harvard won every race entered, and finished with a crushing triumph over Yale in the annual four-mile trip on the Thames at New London. Washington and Harvard never met to settle argued supremacy.

The domination of the four-mile races—Washington was coached by Al Ulbrickson and Harvard by Tom Bolles, former Ulbrickson assistant—by the West brought about conversation calculated to make the races at lesser distances another year. In the sprint races in the East Harvard was easily best, winning the Adams, Rowe, and Compton Cups, while the Harvard lightweight took the triangular race from Yale and Princeton.

The club rowing championship was held at Minneapolis, and Joe Burk, sculling champion, retired undefeated. The new sculling champion was a Canadian, Ted Dubois, who defeated Joe Angyal, a New Yorker, in the final. The Fairmount Rowing Association of Philadelphia succeeded the Penn A.C. to the national eight-oared title.

RUANDA-URUNDI, Territory of. See under BELGIAN CONGO.

RUBBER. The end of 1941 found the domestic rubber manufacturing industry faced with the realization of having its crude rubber supplies from the Far East cut off. The United States was not entirely unprepared. Initiation of the Japanese attack found the country with a stockpile of approximately 600,000 long tons on hand and some 150,000 tons afloat, the major portion of which is expected to reach these shores. Months before the attack, the Office of Production Management (q.v.) took over the supply and distribution of rubber. The initial order, of June 20, 1941, had as its objective the curtailment of consumption by at least 20 per cent. At the end of the year the use of rubber was forbidden in the manufacture of any

CRUDE RUBBER CONSUMED IN PRODUCTS MANUFACTURED IN THE UNITED STATES

[All Figures in Long Tons]

	First nine months 1941	1940
Passenger Car, Truck & Bus Casings	262,680	209,393
Passenger Car, Truck & Bus Inner Tubes	38,010	30,513
Farm Tractor & Implement Casings & Tubes	12,378	8,152
Airplane Casings & Tubes	1,136	431
Motorcycle Casings & Tubes	301	232
Bicycle Tires & Tubes ^a	2,309	1,956
Solid & Cushion Tires	171	162
Industrial Pneumatic Tires & Tubes ^b	1,265	351
Tire Accessories & Repair Materials	10,003	7,149
Mechanical Rubber Goods	52,538	31,141
Boots & Shoes	16,421	10,758
Insulated Wire & Cable Compounds	11,682	5,358
Drug Sundries & Surgical Goods	3,802	2,655
Stationers' Rubber Goods	2,160	1,604
Bathing Apparel	555	479
Miscellaneous Rubber Sundries	3,696	1,686
Rubber Clothing	1,214	317
Automobile Fabrics	289	276
Other Rubberized Fabrics	4,877	2,791
Hard Rubber Goods	4,144	2,607
Heels & Soles	11,081	8,024
Rubber Flooring	1,158	1,022
Industrial Sponge Rubber	9,751	6,463
Sporting Goods, Toys & Novelties	2,107	1,701
Grand Total	453,788	335,221

^a Including single tubes and juvenile pneumatic tires and tubes ^b Including solid truck, tractor, and trailer tires Source: Rubber Manufacturers Association Note Grand total for first nine months of 1940 is estimated to be 71 1/2% of completeness for the rubber industry in the United States, first nine months of 1941, 75 3/4%

tween the United States and various Latin American countries, including Brazil, Haiti, Ecuador, and Mexico, have been concluded. As a result of these efforts, a substantial portion of the United States' normal annual requirements will be available from Latin America within the next decade. It takes from seven to ten years for a rubber tree to reach full bloom and maturity for tapping. In the interim,

WORLD CONSUMPTION OF CRUDE RUBBER—1941
[All Figures in Long Tons]

Month	United States	United Kingdom	All other	Total
Jan.	65,989	13,000	15,211	94,200
Feb.	62,692	13,500	15,908	92,100
Mar.	69,024	12,500	13,776	95,300
Apr.	71,374	12,500	17,826	101,700
May.	71,365	13,000	16,135	100,500
June	84,912	13,000	23,088	121,000
July	68,653	13,500	20,047	102,200
Aug.	55,365	12,500	16,135	84,000
Sept.	53,655	12,000	32,345	98,000
Oct.	60,418	12,500	24,082	97,000
Nov.	"	"	"	"
Dec.	"	"	"	"
Total	663,447	128,000	194,553	986,000

^a Unavailable Source: Rubber Manufacturers Association, W. H. Rickinson & Son. Note Other than United States, above figures are largely estimates.

RECLAIMED RUBBER IN THE UNITED STATES—1941

[All Figures in Long Tons]

Month	Production Tons	Consumption % to Crude	Stocks ^b	
Jan.	20,413	19,086	28.9	33,380
Feb.	19,506	18,222	29.1	33,654
Mar.	22,006	19,611	28.4	35,028
Apr.	21,574	20,427	28.6	35,336
May	22,775	21,405	30.0	35,871
June	23,790	22,559	26.6	36,265
July	23,111	21,725	31.6	36,751
Aug.	24,111	20,864	38.7	39,099
Sept.	24,678	24,032	44.8	38,055
Oct.	26,560	25,009	41.4	38,604
Nov.	"	"	"	"
Dec.	"	"	"	"
Total	228,524	212,940	32.1	"

^a Unavailable. ^b At end of month or year. Source: Rubber Manufacturers Association.

WORLD'S RUBBER SHIPMENTS—1941
[All Figures in Long Tons]

Month	British Malaya	Nether-lands Indies	Other planta-tion	Total planta-tion	Total other	Grand total
Jan.	37,653	58,976	26,276	122,905	3,210	126,115
Feb.	27,235	42,116	22,306	91,657	4,150	95,807
Mar.	56,463	53,300	25,444	135,207	3,820	139,027
Apr.	41,086	49,500	24,811	115,397	3,350	118,747
May	52,896	48,200	21,210	122,306	4,440	126,746
June	50,979	48,800	19,465	119,244	3,910	123,154
July	53,244	53,400	21,477	128,121	3,590	131,711
Aug.	46,216	52,886	24,637	123,739	3,480	127,219
Sept.	70,324	65,471	22,628	158,423	3,550	161,973
Oct.	30,960	54,988	26,445	112,393	3,450	115,843
Nov.	"	"	"	"	"	"
Dec.	"	"	"	"	"	"
Total	467,056	527,637	234,699	1,229,392	36,950	1,266,342

^a Unavailable Source: W. H. Rickinson & Son

products except those intended for military use and a few essential civilian products, largely those necessary to industrial production and the maintenance of health and morale. On June 23 the Rubber Reserve Company, organized to amass the emergency stockpile of rubber, became the sole importer of crude rubber from the Far East. On August 6 it set the price of No. 1 ribbed smoked sheet at 22½¢ per pound.

In the meantime, plans for the cultivation of crude rubber on a wide scale in all Latin American countries, in which the Department of Agriculture is closely cooperating, have proceeded rapidly. Nurseries have been established. Millions of disease-resistant seeds, brought from the Far East and other cultivation centers, have been generously donated and have been planted. Special pacts be-

efforts are being made to increase shipments of "wild" or Para rubber from the Amazon area where millions of untapped trees abound.

The situation at the end of the year was: (1) Consumption of rubber was drastically curtailed; (2) Tires and tubes were rationed to the public; (3) Price ceilings were applied to new and used tires and tubes, and to retreads and retreading; (4) Plans were afoot to increase production of synthetic rubber, guayule, reclaimed rubber, Para rubber, and other so-called substitute materials. The rubber manufacturing industry faced further regulations. (See also CHEMISTRY, INDUSTRIAL, under *Rubber*.)

As was to be expected, development of new rubber products during the year were largely of a military nature. New types of gas masks, barrage balloons, half-tracks for tanks, puncture-proof tubes, bullet-sealing fuel tanks, and countless other military products, appeared. Many of the larger rubber companies turned to production efforts other than in rubber. Goodrich constructed a shell-loading plant in Texas, Goodyear an airplane parts factory in Arizona; Goodyear and General Tire bag-loading plants in Indiana and Mississippi, respectively, U.S. Rubber a small arms munitions plant in Iowa. During the year Firestone formed the Firestone Aircraft Corporation to consolidate its production of aircraft materials and equipment, including its rubber products falling into that classification.

There were, of course, numerous rubber products of a general nature introduced. These included rubber foot flexers, latex figure masks, toplifts of rubber and leather, rubber springs for mine cars, all-rubber shower shoes, all-rubber electrical plugs, conductive rubber flooring, and rubberized cotton fabric balloons used in a unique method of constructing defense homes of concrete rapidly. The development of a method of processing Koroseal, the polyvinyl chloride produced by Goodrich, into a transparent and highly durable film was announced. A new method for producing rubber relief maps from latex was patented. Radiant heat was successfully applied to the manufacture of latex-coated materials.

Several new mechanical developments came to the fore. These included a three-roll wrapping machine for wrapping short lengths of hose and tubing, a device which detects and locates tramp iron in rubber and other products, including chicle and plastics; machinery for debanding scrap tires, which will result in the saving of several millions of pounds of scrap rubber annually; large capacity continuous extruding machines; and an unwinding device which assures continuous uniform tension on the web of material such as rubberized fabrics. Of special interest was a machine, developed by Firestone, the nature of which is at present a military secret, which changes rubber from raw material to finished self-sealing fuel tank linings. See BUSINESS REVIEW under *Restrictions Under the Defense Program*.

M. E. LERNER.

RUMANIA. A monarchy of southeastern Europe. Capital, Bucharest. King, Michael I, who ascended the throne Sept. 6, 1940, upon the abdication of his father, Carol II.

Area and Population. As a result of successive territorial cessions made during 1940, the area of Rumania was reduced from 113,884 square miles to about 74,884 and the population from an estimated 19,422,600 to approximately 13,000,000 at the census of Apr. 6, 1941. The recovery of Bessarabia and Northern Bukovina in July, 1941, as a

result of the German-Russian war (see *History* below) gave Rumania a total area of about 93,772 square miles and a population of some 16,800,000. The territories permanently ceded were Northern Transylvania (area, about 19,300 square miles by Rumanian estimate; population, 2,385,987) and Southern Dobruja (area 2,982 square miles; population, 378,344). Northern Transylvania was ceded to Hungary on Aug. 30, 1940, and Southern Dobruja to Bulgaria on Sept. 7, 1940. About 1,150,000 Rumanians and 1,200,000 Magyars and other non-Rumanians were estimated to have been ceded to Hungary with Northern Transylvania, while Bulgaria obtained an estimated 78,000 Rumanians and 300,000 non-Rumanians in Southern Dobruja.

Estimated populations of the chief cities on Jan. 1, 1939, were: Bucharest, 648,162 (nearly 1,000,000 in April, 1941); Chisinau (Kishenev), 112,500; Cernaui (Czernowitz), 109,698; Iasi (Jassy), 104,471, Galati (Galatz), 102,232, Cluj (ceded to Hungary), 100,272; Timisoara (Temesvar), 89,872, Oradea-Mare (ceded to Hungary), 80,872.

Education and Religion. Infant and primary schools of all types in 1938-39 numbered 19,394, with 2,623,000 pupils; secondary schools, 925, with 204,254 pupils in 1937-38. Adult primary schools had 669,187 enrolled (1938-39). Besides various special and vocational schools, there are three universities—at Bucharest, Iasi, and Cernaui—with 30,771 students in 1937-38. The university of Cluj was transferred to Hungary in 1940. According to a 1938 estimate, there were 13,200,000 Orthodox Church members, 1,426,813 Greek Catholics, 1,500,000 Jews, 1,200,000 Roman Catholics, 720,000 Reformists, 400,000 Lutherans, 260,000 Moslems, and 75,000 Unitarians.

Production. About three-fourths of the population are engaged in agriculture. The kingdom normally produces an export surplus of cereals, livestock, and animal products. Production in 1939 was (in metric tons): Wheat, 4,452,800, barley, 816,400; rye, 431,500, oats, 487,000; corn, 6,051,200; potatoes, 1,988,400; beet sugar, 127,900; tobacco, 14,400. Wine output, 11,542,000 hectoliters.

After Russia, Rumania is Europe's leading petroleum producer. Output in 1940 was 43,231,000 bbl., of which about 28,500,000 bbl. were exported (largely to Germany). Mineral and metallurgical production in 1940 was estimated as follows (in metric tons): Coal, 2,600,000; iron ore, 130,000; pig iron, 140,000, manganese ore, 40,000, copper, 600; lead, 5,200; bauxite, 40,000; and molybdenum ore, 160. Industrial establishments in 1937 numbered 3,512 with 278,919 workmen. Flour milling, brewing, and distilling are the leading lines.

Foreign Trade. The following figures are in millions of lei (1 lei equaled \$0.0054 at official rate in 1941). Imports, 27,411 in 1940 (22,890 in 1939); exports, 36,780 (26,809). Chief 1940 imports: Iron and its products, 6,421; machinery and apparatus, 4,766; other metals, 3,487; vehicles, 2,895; textiles, yarn, cloth, etc., 3,104; chemicals, dyes, drugs, etc., 1,641. Principal exports: Petroleum and products, 23,002; cereals, 6,727; animals and animal products, 2,057; wood and its products, 1,823. Imports from Germany in 1940: 13,870 (9,000 in 1939); Bohemia-Moravia, 3,761; Italy, 2,611. Exports to Germany in 1940, 16,025 (8,665 in 1939); United Kingdom, 3,866; Italy, 3,446. See TRADE, FOREIGN.

Finance. The budget for the year 1939-40 estimated ordinary revenue and expenditure, alike, at 32,229 millions of lei. A special budget for national

defense carried an additional 6,000 millions. Public debt, Apr. 1, 1939, 104,127.4 millions.

Transportation. The state railways in 1940 had 9,505 miles of line; in 1938 they carried 48,731,000 passengers and 21,999,000 metric tons of freight. Highways extended 67,330 miles (see **ROADS AND STREETS**). The state operated regular steamship services on the Danube and Black Sea, and also an air network connecting the principal cities. The German air network also took in Bucharest.

Government. The Constitution of Feb. 27, 1938, was suspended and Parliament dissolved on Sept. 5, 1940. By royal decrees of Sept. 5-6, 1940, all of the governing powers, except command of the army and the rights to issue currency and grant decorations and amnesty, were transferred to Gen. Ion Antonescu, who was appointed Head of the State and Premier on September 6. King Carol's Front of National Regeneration, which in 1938 replaced all political parties, was replaced by the pro-Nazi Iron Guard on Sept. 15, 1940, when Rumania was proclaimed a National Legionary State. The Iron Guard's monopoly of political power was ended Feb. 15, 1941, in favor of a military dictatorship (see below).

HISTORY

The partial dismemberment of Rumania by Russia, Hungary, and Bulgaria in 1940, and the establishment of a German protectorate over the remnants of the kingdom (see **YEAR BOOK** for 1940, p. 665 f.) drew Rumania deeper into the morass of civil and foreign war in 1941.

Iron Guard Revolt. On January 21 an extremist faction of the Fascist Iron Guard launched a bloody revolt against General Antonescu and his totalitarian regime. The Iron Guard was primarily responsible for the overthrow of the parliamentary system, the forced abdication of King Carol, and the establishment of the Antonescu dictatorship. But its extremist leaders were fanatical nationalists. They bitterly resented Antonescu's growing subservience to Germany and his supine acceptance of the Axis "arbitral award" giving Northern Transylvania to Hungary. They also became indignant at the dictator's failure to carry out a "total" social and economic revolution against capitalists, Jews, and old-line politicians.

Mounting resentment at the rapid extension of German political and economic control led to the assassination of a German army major in Bucharest January 21. A clash between pro-Nazi demonstrators and extremist Iron Guardists in the capital the following day was the signal for a wide-spread revolt by the extremists under Vice Premier Horia Sima. The latter faction occupied the Bucharest police and radio stations and other important public buildings there and in other cities. However the army remained loyal to Antonescu and after four days of severe street fighting the revolt was crushed. According to a subsequent statement by the Ministry of Interior, the casualties included 370 killed and 444 wounded in Bucharest alone.

The revolt riveted German control more firmly upon the unhappy kingdom. Although German troops took little part in the fighting, they took up positions at strategic points throughout the country and markedly strengthened Antonescu's hand. At the height of the crisis, the dictator warned his enemies that "the loyal shadow of the German Fuehrer stands behind me." With the collapse of the revolt, which was marked by Iron Guard excesses against the Jews, Antonescu ordered a large-scale round-up of Iron Guardists. By mid-February

some 7,000 were imprisoned. More severe penal laws were enacted and military courts meted out heavy punishment, including numerous death sentences. Iron Guard organizations were dissolved and their funds confiscated. Sima, however, escaped the police dragnet and was later reported in both Berlin and Budapest. It was indicated that the Germans were holding him in reserve as a possible substitute for Antonescu in case the latter swerved from his pro-German course.

New Government Formed. With the power of the Iron Guard broken, at least temporarily, General Antonescu established a full military dictatorship. Army officers formed a large majority of the new Cabinet announced January 27. General Antonescu remained both Premier and Foreign Minister. At the same time he placed a large number of industries under direct army control. On February 2 he announced that as soon as order was restored, he would establish a National Socialist state based on Nazi-Fascist doctrines.

On February 25 he called a nation-wide plebiscite for March 3-5 to express "approval or disapproval" of his regime. Electoral regulations issued at the same time barred an estimated 750,000 Jews from voting, made voting compulsory for all other persons over 21 years of age, and forbade speeches or manifestations of any sort. Demonstrators were threatened with five years' imprisonment. These provisions, coupled with the usual Government manipulation of the polls, insured the outcome. On March 5 it was announced that the vote was 2,490,944 to 2,816 in favor of the Government. The mounting evidences of internal unrest during ensuing months underlined the inadequacy of the plebiscite as an index of public opinion.

Economic Difficulties. A serious food shortage developed, although agricultural Rumania is normally the bread basket of Central Europe. Two breadless days a week were introduced May 11. Flour and sugar were rationed more stringently on May 24. At the end of July the meat ration in Bucharest was reduced to 250 grams monthly as compared with 1,600 grams monthly in Germany. Food prices were reported to have increased ten-fold in the year ended in July. On October 26 the Government sought to check runaway prices by prohibiting an increase in prices, wages, and salaries beyond the level obtaining September 1. The food shortage was widely attributed to the presence of large numbers of German troops in Rumania and to abnormally large exports of grain and meat to the Reich and its allies. The Antonescu Government took severe measures to curb Communist and Allied propaganda, which made telling use of this situation.

Foreign Policies. The consequences of pursuing a foreign policy dictated in Berlin earned Antonescu further hostility among his predominantly pro-Ally countrymen. Britain, which with France had guaranteed Rumania's independence and territorial integrity in 1939, broke off diplomatic relations February 10 because Antonescu had authorized large numbers of German troops to enter the country. Bucharest instituted nightly blackouts as a precaution against possible British bombing raids. On February 15 the British blockade was clamped upon Rumania and all goods of Rumanian origin or ownership were rendered liable to seizure.

Free Rumania Movement. Meanwhile the Rumanian Minister to London, Dr. Viorel Tilea, had resigned in protest at Antonescu's capitulation to Berlin. With the assistance of the British Ministry of Information, he launched a Free Rumania movement, which was supported by the Rumanian chargé

d'affaires and several other members of the London Legation. Early in the autumn Charles Davila, former Rumanian Minister to Washington, arrived in the United States to promote the Free Rumania movement there. It was said to have the support of Juliu Maniu, leader of the powerful Peasant party, and other pro-democratic leaders in Rumania. In December this movement received the endorsement of ex-King Carol, who in March escaped from "protective custody" in Spain and finally took refuge in Mexico City.

Collaboration with Nazis. After crushing the Iron Guard revolt, Premier Antonescu carried out his announced policy of "supporting the Axis without hesitation." German troops, estimated at 350,000 by the retiring British Minister, were concentrated in southern Rumania. They constituted a vital part of the diplomatic, military, and economic pressure which brought Bulgaria into the Axis fold on March 1. On February 21 it was announced that the Germans had obtained management control and half ownership of the Melaxa steel and munitions works, which almost monopolized the manufacture of arms, munitions, and locomotives in Rumania.

On March 5 Antonescu conferred with Reich Marshal Hermann Goering in Vienna. Upon his return to Bucharest he announced March 8 that he had given Hitler, Mussolini, and Goering veto power over all Rumanian economic dealings with foreign countries. This move followed the signing in Moscow on February 26 of a two-year economic accord between Rumania and the Soviet Union—the first definite sign of friendly relations between the two governments since the Russian annexation of Bessarabia and Northern Bukovina in 1940. Beginning in March, the growing tension in Russo-Rumanian relations served as a barometer indicating the approach of the German conflict with the Soviet Union.

On March 25 Antonescu publicly declared that there could be no peace in southeastern Europe "until the Rumanian people are given justice or get it for themselves." In view of German control of Rumanian foreign policy, this reference to Rumania's lost territories was interpreted as a demand for the restoration of Bessarabia and Northern Bukovina rather than the Transylvanian districts awarded Hungary by the Axis powers. In his speech of March 8, Antonescu declared the presence of German troops in Rumania had enabled him to demobilize Rumanian forces at a saving of a billion lei. But the training of Rumanian reservists by German instructors was instituted in March. The German-Yugoslav crisis (see YUGOSLAVIA) and the conclusion of a Soviet-Yugoslav non-aggression and friendship pact was followed immediately by an order for general mobilization in Rumania on April 6.

Two weeks later Antonescu's War Minister called upon the nation "to wipe out the bitter traces left behind by the sorrowful year of 1940." For a time it appeared as though the Government was channeling Rumanian revisionist sentiment against Hungary, which was then engaged in helping itself to Yugoslav border territories. But the "crisis" between Hungary and Rumania died down at the end of April. The real objective of German-Rumanian policy was indicated by the withdrawal of the main Soviet forces from Bessarabia to a stronger defense line on the former Rumanian frontier in mid-May. German troops from the other Balkan countries and newly mobilized Rumanian forces were concentrated along the Russian border for a surprise attack, which began June 22.

Conflict with Russia. On June 11-12, Antonescu

conferred with Hitler and Joachim von Ribbentrop in Munich. According to Bucharest reports, Hitler promised to obtain for Rumania the provinces of Bessarabia and Soviet Moldavia. On June 22 Antonescu proclaimed a holy war against Communist Russia. At the same time he reportedly turned over his civil duties as Premier to his nephew, Mihail Antonescu, who was Minister of State. Martial law was declared.

Before the Russian air force was driven out of effective bombing range, Bucharest and many other Rumanian cities suffered heavy damage from Soviet air attacks. Much destruction of oil wells and installations also was reported. The Rumanian forces apparently fought willingly until the Russians were driven out of the territories annexed in 1940. But thereafter the army and the Antonescu Government displayed growing reluctance to press the invasion, which carried the Axis forces far into Russia at the cost of heavy casualties (see WORLD WAR).

The small number of Hungarian troops participating in the Russian campaign increased Rumanian resentment. It was feared that the Hungarians were conserving their forces to enforce their demand for the remainder of Transylvania. Late in July Berlin reportedly threatened to accede to Hungary's plea for the reopening of the Transylvanian question unless the Rumanians pressed the drive into Russia with more vigor. As a further spur, the Germans authorized the annexation of Odessa and its rich hinterland to Rumania.

But heavy casualties in Russia and the increasingly difficult economic situation at home undermined the morale of the Rumanian forces. The chief of staff of the army, Gen. Michael Joneacu, was killed at the front in mid-September. By the end of October dead and wounded were estimated at some 250,000. A number of generals, said to have joined the Peasant party leader, Juliu Maniu, in demanding termination of hostilities, were reportedly shot. Following the fall of Odessa, the main Rumanian forces halted their advance at the Bug River late in October. Many soldiers were then permitted to return home. However the heavy German losses and the Russian counteroffensive in December led Berlin to renew its demand for Rumanian troops, both to aid in Russia and to replace German forces withdrawn from the German-occupied countries for service on the Eastern and Libyan fronts. Although Rumania on November 25 had renewed its adherence to the Anti-Comintern Pact for another five years, this new demand encountered further resistance in Bucharest.

Transylvania Partition Repudiated. Meanwhile on October 22 it was reported that Rumania had denounced the Vienna Accord of 1940 under which Northern Transylvania was awarded to Hungary. It was suspected that this action was instituted by Germany in a move to obtain a greater military contribution from Hungary in Russia. Yet Rumanian hostility to Hungary ran deep, as was indicated by repressive and discriminatory measures taken against the Magyar minority in Rumania in July.

War with the Democracies. Popular opposition to Rumania's war alliance with Germany was intensified as a result of Britain's declaration of a state of war with Rumania on December 7. The various British dominions followed suit. After Japan's attack upon the United States, the Antonescu Government followed Germany in declaring a state of war with America on December 12. Under German pressure, Bucharest in July had closed U.S. consulates.

Internal Trends. These developments in the field of foreign affairs were accompanied by growing political tension in Rumania. Despite numerous arrests, the imposition of the death sentence for terrorism beginning April 18, and further assurances of Hitler's support, the Antonescu regime found its position more and more precarious. All firearms owned by private individuals were called in May 5. A revival of Iron Guard propaganda and terrorism commenced in May. With the opening of the Russian campaign, anti-Government propaganda and sabotage, attributed to Communists, assumed dangerous proportions. An anti-Nazi rising in Jassy late in June was put down only after three days of fighting, according to an Italian correspondent's report to a Rome paper.

The arrest of three prominent members of the Peasant party was reported late in July. On November 6 General Antonescu ordered another plebiscite to permit a vote on his pro-Nazi policies. In the plebiscite of November 9 Jews were again excluded, the voters were restricted to voting "yes," or "no," and those wishing to vote "no" had to declare their intention in advance to the authorities. This time the *Official Gazette* reported that only 34 registered disapproval of the Antonescu regime while 1,784,700 voted "yes."

See BULGARIA, GERMANY, GREAT BRITAIN, and UNION OF SOVIET SOCIALIST REPUBLICS, under *History*; FASCISM; LABOR CONDITIONS under *Union Movements*; NAVAL PROGRESS.

RURAL ELECTRIFICATION ADMINISTRATION (REA). See AGRICULTURE, U.S. DEPARTMENT OF under *Rural Electrification*; ELECTRIC LIGHT AND POWER.

RUSSELL SAGE FOUNDATION. See PHILANTHROPY.

RUSSIAN ORTHODOX CHURCH. See RELIGIOUS ORGANIZATIONS.

RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

RYE. The rye crop of the United States in 1941, estimated at 45,191,000 bushels by the U.S. Department of Agriculture, was 10 per cent larger than the 1940 crop of 41,149,000 bushels and 17 per cent larger than the 1930-39 average production of 38,472,000 bushels. A record high production of 100,896,000 was attained in 1922. The area harvested in 1941, 3,498,000 acres, was 9 per cent larger than the 1940 acreage of 3,210,000 and compared with the 1930-39 average of 3,320,000 acres. Acre yields averaged 12.9 bushels in 1941 and 12.8 bushels in 1940. Leading rye States were North Dakota with 13,516,000 bushels, South Dakota 7,510,000, Nebraska 4,278,000, Minnesota 3,540,000, Indiana 1,953,000, Wisconsin 1,633,000, and Ohio 1,332,000 bushels. The season average price per bushel (preliminary) received by farmers was 53.1¢ and the value of production was estimated at \$23,978,000 in 1941 compared to 41.6¢ and \$17,101,000 in 1940. See AGRICULTURE under *Crop Production*.

SAARLAND. See GERMANY under *Area and Population*.

SABOTAGE. See FEDERAL BUREAU OF INVESTIGATION; LABOR LEGISLATION; TRANSPORTATION DIVISION; UNITED STATES under *Civil Liberties*; each of the German-occupied countries and SOUTH AFRICA, UNION OF under *History*.

ST. CHRISTOPHER. Same as *St. Kitts*, see LEEWARD ISLANDS.

ST. HELENA. See BRITISH EMPIRE.

ST. KITTS. See LEEWARD ISLANDS.

ST. LAWRENCE SEAWAY. See CANADA under *History*; WATERWAYS, INLAND.

ST. LUCIA. An island colony in the Windward Islands group of the British West Indies. Area, 233 square miles; population (1939), 69,737. Castries (capital) had 12,000 inhabitants. Vital statistics (1939): 2,152 births, 1,375 deaths, and 382 marriages. Education (Jan. 1, 1939): 45 schools and 10,649 students enrolled. Sugar, copra, limes, cacao, and bananas are the chief products. Trade (1939): £222,153 for imports (coal £32,594) and £157,177 for exports (sugar £64,257, bunker coal £33,419, bananas £6,585). Shipping (1939): 1,531,416 tons entered and cleared.

Government. Finance (1939): £130,261 for revenue and £132,732 for expenditure. Public debt (1939): £115,889. St. Lucia is governed by an administrator (subordinate to the governor of the Windward Islands), assisted by an executive council. There is a legislative council (partly nominated and partly elected) over which the governor presides. Administrator, Arthur Alban Wright (appointed June 10, 1938).

History. The Anglo-American accord of Sept. 2, 1940, providing for establishment of United States auxiliary air bases in St. Lucia, was formalized in the treaty signed Mar. 27, 1941, in London (see GREAT BRITAIN under *History*). Under the lease annexed to the treaty, the British Crown transferred to the United States for 99 years (1) 245 acres of land fronting Gros Islet Bay near the northern tip of the island, for development as a seaplane patrol base, and (2) five pieces of land at Vieux Fort near the southern tip of the island, for development as a heavy land bomber patrol station. The areas leased at Vieux Fort included 1,000 acres along the coast between Pointe Sable and Anse Pointe Sable, a section 1,000 feet long and 500 feet deep along Vieux Fort Bay but excluding Vieux Fort village; 10 acres in Vieux Fort valley, for construction of a dam and reservoir for water supply, the right of way for the water conduit, and Maria Island. The United States agreed to keep open existing highways traversing the leased areas, or to build substitute highways outside. Work began immediately on the seaplane base at Gros Islet Bay, estimated to cost \$1,625,000.

It was announced in March, 1941, that a war tax had been imposed at a rate ranging from 5¢ on incomes of £50 to £1 on incomes of £200 and more. The income tax was increased by 30 per cent on incomes up to £1,000 and by 40 per cent on incomes of more than £1,000. The tax on companies was increased by 35 per cent.

ST. PIERRE AND MIQUELON. A French colony named after the main islands in two small groups, near the south shore of Newfoundland. Area: St. Pierre group—10 square miles, Miquelon group—83 square miles. Total population, 4,175. Capital, St. Pierre. The main industry is cod fishing. Trade (1940): 28,614,000 francs (28,735,000 for 1939) for imports and 16,475,000 francs (18,010,000) for exports (franc averaged \$0.0251 for 1939; official rate for 1940, \$0.0288). Textiles, wines, salt, and foodstuffs were the chief imports. Cod (fresh and dried) and fish products comprised the principal exports. Budget (1940): 13,738,690 francs. An administrator, assisted by a consultative council of administration, governs the colony.

History. The colony was under the control of the French government of Vichy, headed by Marshal Pétain, from the collapse of the French Republic during June, 1940, until Dec. 24, 1941, when an

expedition headed by Vice Admiral Emile Muselier, under orders from General Charles de Gaulle's "Free French" government, landed on the islands and removed the Vichy-appointed officials from office. A plebiscite was held immediately which showed a 98.2 per cent margin for the government of General de Gaulle. The complete vote was announced as: Free French, 783; void, 215; collaboration with the Vichy government, 14. Alain Savary, who was appointed commissioner, stated that the policy of his administration would be to "respect liberty" and to harness the resources of the islands to the cause of the Allies. See FRANCE under *History*; PAN AMERICANISM

ST. VINCENT. See WINDWARD ISLANDS.

SAKHALIN. An island north of Japan and near the east coast of Siberia. Area, 28,597 square miles. The northern part (north of 50° N), 14,662 square miles, belongs to the Union of Soviet Socialist Republics. Karafuto (q.v.), the southern part, 13,935 square miles, belongs to Japan.

SALES. See MARKETING FOR SALES TAXES, see States, as ARKANSAS under *Legislation*, TAXATION

SALVADOR, EL. A republic of Central America. Capital, San Salvador

Area and Population. The smallest and most densely populated of the Central American states, El Salvador has an area of 13,176 square miles and a population estimated at 1,744,535 on Jan. 1, 1940. Indians and mestizos constitute the vast bulk of the population, but the small ruling class is largely of Spanish descent. Populations of the chief cities in 1939 were: San Salvador, 105,494, Santa Ana, 86,667, San Miguel, 46,569, Santa Tecla, 34,313, Ahuachapán, 32,220, San Vicente, 30,000; Zaitatecoluca, 28,081; Sonsonate, 21,484. Births in 1939 numbered 71,694 (44,454 illegitimate); deaths, 31,656; marriages, 6,149.

Defense. Military service is compulsory in wartime. The active army on Jan. 1, 1941, numbered 3,370 officers and men (including the National Guard), with 78 men in the air force. Trained reserves totaled 728. Early in 1941, a U.S. Army officer, Lt. Col. Robert L. Christian, replaced a German officer as director of the Military Academy.

Education and Religion. Illiteracy remains widespread. At the beginning of 1941, there were 1,349 primary schools with 102,042 regular pupils and 27,452 in special courses for illiterates; 2,551 students in secondary schools; 218 students in four normal schools; 422 students in the National University; and 413 in the School of Music. Roman Catholicism is the dominant religion.

Production. Coffee, the main crop and chief support of the national economy, accounted for 76.5 per cent of the value of all exports in 1940 (83.6 per cent in 1939). The coffee export crop was 925,000 bags (of 132 lb.) in 1939-40 and 667,000 bags (estimated) in 1940-41. Sugar production from the crop harvested in 1940-41, 36,643,312 lb.; sugar production in 1940 was 308,977 quintals (of 101.2 lb.), of which 71,514 quintals were exported, cotton in 1940-41, about 9,000 bales (of 478 lb.). Rice, henequen, and indigo are other export crops. Corn and beans are the main food crops. The forests yield balsam and hardwoods. Cattle and hog raising are important local industries. Gold and silver are mined, the exports totaling 8,558 and 148,877 oz., respectively, in 1940.

Foreign Trade. Imports in 1940 were 20,270,100 colones (22,124,300 in 1939); exports, 30,569,900

(31,848,500). The main 1940 exports were (in U.S. dollars): Coffee, \$9,349,993; gold and silver, \$1,073,619; other minerals, \$756,286; sugar, \$210,575. The United States took 75.2 per cent of all exports by value in 1940 and supplied 67.4 per cent of all imports.

Finance. Including carry-overs from preceding years, budget estimates balanced at 22,047,000 colones in 1941 and 24,267,000 in 1940. Actual General Fund revenues in 1940 were 17,377,000 colones, expenditures, 20,107,000. The public debt on Apr. 30, 1941, was 42,872,000 colones (37,525,000 external and 5,347,000 internal), against 40,724,000 on June 30, 1939. Service of the foreign debt was suspended Nov. 27, 1937. The exchange rate of the colon was \$0.40 in 1939, 1940, and 1941.

Transportation. The two railway systems operating in Salvador (total of 378 miles of line) carried 885,132 passengers and 374,814 tons of freight in 1940. As of Jan. 1, 1941, commercial air services were provided by Pan American Airways and the T.A.C.A. network. During 1940, 2,758 passengers entered the country on all airlines and 2,747 left. Highways extended 3,709 miles in 1940. Progress on the Salvadorean section of the Inter-American Highway was speeded in 1940 by completion of a suspension bridge over the Lempa River with a central span of 820 feet. The chief ports are La Unión, Libertad, and Acajutla; during 1940 they were entered by 421 large and 618 small vessels which landed 2,437 passengers.

Government. The Constitution of Jan. 20, 1939, vests executive power in a President elected for six years and ineligible to succeed himself. Legislative power rests in the unicameral National Assembly of 42 members elected for one year by universal suffrage. President Maximiliano H. Martínez seized power through a military coup Dec. 2, 1931. After serving out his predecessor's term, he was selected for a four-year term beginning Mar. 1, 1935, and on Jan. 21, 1939, his term was extended for six years to Jan. 1, 1945, by a hand-picked Constituent Assembly (see 1939 YEAR BOOK, p. 693).

History. The position of Salvador with regard to the antagonism between the United States and the governments of Germany, Italy, and Japan became closely identified with that of the United States itself. Upon the outbreak of war between the United States and Japan the National Assembly, immediately summoned in session, declared, December 8, that Salvador was at war with Japan. Upon the German and Italian declarations of war against the United States, the Assembly voted, December 13, that Salvador was at war with Germany and Italy. The votes for declarations against all three nations were unanimous. Military training was ordered in December, for all males from 15 to 50 years of age.

Salvador's stand was not dictated by sentiment alone. Political circles had reasons of national advantage both to aid the United States and to oppose the powers forming the Axis. Salvador's foreign purchases needed the offset of exportation of coffee to the United States, as arranged under the existing system of agreements; and Salvador, being the only Central American country without an Atlantic port, risked a stoppage of its foreign trade in the event of a non-American power's dominating the seas off the Pacific coasts of Central America.

A deficient crop of coffee was gathered in late 1940 and early 1941, the weather in 1940 having been too dry for normal growth. The harvest was put at five-sevenths of normal. It somewhat more than covered the quota of the 600,000 bags allowed for Salvadorean exportation to the United States in

the ensuing year, by the inter-American coffee agreement. The prices obtainable prior to this agreement had fallen far short of the level satisfactory to the country, but they improved after the agreement had been made. This freed Salvador from the full severity of the economic threat, but there remained much difficulty, largely because the drought of 1940 had thinned the crops of corn and beans, so that the prices of these staple foods of the population threatened to cause hardship. Early in 1941 the government, seeking to exercise limitation over the harm apprehended in the foreign trade, established strict control over exports and reexports.

Salvador followed, in moderated degree, the example of Panama in restricting foreigners' privileges of doing business in the country. A law of July 27 prohibited the establishment of a new business enterprise by any member of one of a list of specified peoples: these were Arabs, Palestinians, Turks, Chinese, Lebanese, Syrians, Egyptians, Persians, Hindus, and Armenians. The law was said to have for its purpose the welfare of the small native business people. The existing business enterprises of members of the designated foreign groups remained lawful, except that they could not start new branch offices. Persons under the ban suffered disqualification on account of ethnic origin, whatever citizenship they might have acquired.

A crime bearing an appearance of foreign political motivation occurred in May. The German chargé d'affaires in Salvador, Richard von Heynitz, disappeared and was shortly found, shot to death. Not long before this, the German consul at Tegucigalpa, R. Motz, had died in a somewhat similar way. The German chargé d'affaires in Honduras, Christian Zinsser, was said to have been in each of the two countries when the killing there occurred.

See PAN AMERICANISM, LEND-LEASE ADMINISTRATION.

SALVATION ARMY, The. A world-wide organization with international headquarters at Denmark Hill, London, England, whose purpose is the salvation of mankind from all forms of distress—spiritual, moral, temporal. The movement was first organized as The Christian Mission in the East End of London in 1865 by William Booth, and, in 1880, was extended to the United States. The government is military in character with Gen. George L. Carpenter as international head. The doctrine of The Salvation Army is a simple evangelical creed based on the Methodism from whence it came.

The Salvation Army is now active in 97 countries and colonies, carrying on its work in 104 languages. There were in its service in 1941, 26,877 officers and cadets; 9,980 persons without rank wholly employed; 167,377 honorary local officers and bandsmen; 82,097 songsters; 35,770 corps cadets; and 17,816 corps and outposts in operation. Social welfare institutions and agencies numbered 1,673, free day schools 1,132, and Naval and Military Homes 35. It published 129 periodicals, with a total average circulation of 1,550,422 copies per issue.

There were in the United States in 1941, 1,662 corps and outposts, 4 Training Colleges, 4,891 officers and cadets, and 49,486 honorary local officers and bandsmen. Converts during the year numbered 65,701. Social Welfare institutions included 128 men's hotels and 17 residential hotels for young women, accommodating a total of 9,817. Men's Social Service Centers numbered 111 with accommodation for 5,554; 9 children's homes and hospitals with accommodations for 763; 35 women's homes and hospitals with accommodations for 2,150; and 2 dispensaries and 4 clinics which

treated 21,185. At Thanksgiving and Christmas free dinners were given to 559,262 persons and toys to 398,178 children. During 1941, 8,909 discharged prisoners and 2,632 parolees were assisted by The Salvation Army; 96,728 mothers and children were given summer outings; 55,665 men and women were given employment through the Army's 61 free employment bureaus; and 722 missing persons found. Salvage of waste paper and rags for national defense purposes approximated 360,000 tons. In 26 States from Maine to Hawaii The Salvation Army operates 45 United Service Organizations clubs for men in the armed forces.

The National Headquarters of The Salvation Army in the United States are at 120 West 14th Street, New York City. National Commander, Commissioner Edward J. Parker.

SAMOA. A group of 14 islands in the Southern Pacific, about 4,000 miles southwest of San Francisco. The islands of the group east of 171° W. longitude belong to the United States; those west of that line are administered by New Zealand under a mandate of the League of Nations.

American Samoa. American Samoa comprises the islands of Tutuila, Tau, Olosega, Ofu, Annuu, and Rose Island. Swains Island is included in the administrative district of American Samoa. The total area is 76 square miles and the estimated population on July 1, 1941, was 14,458, mainly Polynesian or part Polynesian. Pago Pago (on the island of Tutuila), about 1,000 inhabitants, contains a U S naval station—the seat of the government. In 1940–41 the average school enrollment was about 3,000. English is the language of instruction. Copra produced and exported during 1940–41 totaled 862 tons valued at \$23,557. Trade (year ended June 30, 1941): \$263,703 for imports and \$93,839 for exports. The islands are under the jurisdiction of the U.S. Navy Department and are administered by the commandant of the naval station at Pago Pago. There is a native advisory council called the Fono, which meets annually. In an Executive Order of Feb. 14, 1941, President Roosevelt announced that after May 15, 1941, no unauthorized aircraft or vessels would be permitted within three miles of the Samoan islands of Rose and Tutuila. The U.S. Congress during March, 1941, approved funds for defense aviation facilities at Samoa. Governor, Capt. Lawrence Wild, U.S. Navy (assumed office, Aug. 8, 1940).

Western Samoa. The islands under New Zealand's control are officially known as the Territory of Western Samoa. Area, 1,133 square miles. Population (July 1, 1940), 61,249, including 57,374 Samoan natives. Capital, Apia (on the island of Upolu). The natives are Christians of different denominations. There were 11,305 students enrolled in the schools. Copra, cacao, rubber, and bananas are the chief products. Trade (1939): £194,736 for imports and £220,409 for exports. Finance (year ended Mar. 31, 1940): £131,416 for revenue and £135,648 for expenditure. Shipping (1939): 98 vessels of 112,306 tons entered the port of Apia. The minister of external affairs for New Zealand is in charge of Samoa. Acting Administrator, A. C. Turnbull.

SAN DIEGO. See ARCHITECTURE under *Defense Housing*; DAMS.

SAN FRANCISCO. See ARCHITECTURE under *Defense Housing*; ART; MUNICIPAL OWNERSHIP; MUSIC; PLANNING; PORTS AND HARBORS.

SANITATION. See GARBAGE AND REFUSE DISPOSAL; PUBLIC HEALTH SERVICE; SEWERAGE AND SEWAGE

PURIFICATION; WATER WORKS AND WATER PURIFICATION.

SAN MARINO. An independent republic in Italy, near the town of Rimini. Area, 38 square miles; population (1939), 14,545. Capital, San Marino. Chief exports: cattle, wine, building stone. Financial estimates (1939-40) were balanced at 6,009, 919 lire (lira averaged \$0.0520 in 1939). The legislative power is in the hands of the grand council of 60 members elected by popular vote. Two are appointed from this council every six months to act as regents.

SANTA CRUZ DE TENERIFE. See CANARY ISLANDS.

SANTO DOMINGO. See DOMINICAN REPUBLIC.

SÃO THOMÉ AND PRINCIPE. See PORTUGAL under *Colonial Empire*.

SARAN. See CHEMISTRY, INDUSTRIAL under *Textiles*.

SARAWAK. See BRITISH MALAYA.

SASKATCHEWAN. A prairie province in western Canada. Area, 251,700 sq. mi, including 13,725 sq. mi. of fresh water. Population (1941 census), 887,747, compared with (1936 census) 930,893. Vital statistics (1940): 19,245 living births, 6,438 deaths, 7,805 marriages. Chief cities (1941 census): Regina, capital (57,389), Saskatoon (42,320), Moose Jaw (20,496), Prince Albert (12,299), Weyburn (6,119), Yorkton (5,586), Swift Current (5,515). Education (1938-39): 229,004 students in schools and colleges.

Production. The gross value of agricultural production for 1940 was \$231,734,000 (field crops \$172,979,000, farm animals \$26,188,000, dairy products \$19,646,000, poultry products \$7,214,000, fruits and vegetables \$4,117,000). In 1941 the chief crops were wheat 136,000,000 bu. (272,000,000 in 1940), oats 82,700,000 bu. (93,000,000), barley 28,000,000 bu. (23,500,000), rye 6,300,000 bu. (7,000,000), flaxseed 3,600,000 bu. (1,650,000), potatoes 129,250 tons (127,400), hay 650,000 tons (385,000), fodder corn 42,000 tons (37,000). Livestock (1940): 1,249,200 cattle (including 502,500 milk cows), 791,000 hogs, 398,700 sheep, 813,600 horses, 10,251,000 poultry. Furs (1938-39): 1,122,882 pelts worth \$983,447. Forest products (1939) were valued at \$2,243,000.

Mineral production (1939) was valued at \$8,794,090 (see YEAR BOOK for 1940; p. 670). Gold, copper, zinc, silver, coal, and sodium sulphate were the main minerals. Manufacturing (1939): 737 factories, 6,475 employees, \$7,346,127 for salaries and wages, \$20,283,273 net value of products.

Government. Finance (year ended Apr. 30, 1940): \$24,958,420 for revenue and \$25,258,324 for expenditure; net funded debt, \$196,065,676. Budget estimates (1940-41): \$23,857,395 for revenue and \$23,980,005 for expenditure. The executive authority is vested in a lieutenant governor who is advised by a ministry of the legislature. In the legislative assembly there are 52 members elected for a five-year term by adult male and female voters. Six senators (appointed for life) and 21 elected commoners represent Saskatchewan in the Federal parliament at Ottawa. Lieutenant Governor, A. P. McNab (appointed Oct. 1, 1936); Premier, W. J. Patterson (Liberal). See CANADA.

SAUDI ARABIA. See under ARABIA.

SAXONY. See GERMANY under *Area and Population*.

SCANDINAVIAN LITERATURE. See DANISH, NORWEGIAN, and SWEDISH LITERATURE.

SCHAUMBURG-LIPPE. See GERMANY under *Area and Population*.

SCHHEELITE. A source of tungsten (q.v.). See GEOLOGICAL SURVEY.

SCHIZOPHRENIA. See PSYCHIATRY.

SCHOOLS. The U.S. Office of Education estimated that 31,566,000 pupils were enrolled in schools of all types in the United States for the school year 1941-42. The enrollments were distributed as follows:

Elementary	20,707,000
Secondary	7,334,000
Higher education	1,450,000
Nurse-training	100,000
Business colleges (day)	75,000
Evening and part-time	1,850,000
All other schools	50,000
Grand Total	31,566,000

Private schools accounted for 2,225,000 pupils of the total elementary enrollment and 500,000 of the total secondary enrollment (four years of high school). Forty thousand of the 625,000 kindergarten pupils were enrolled in private kindergartens. Entering the first grade for the first time were 2,090,000 pupils—200,000 in private schools and 1,890,000 in public schools. The estimated number of graduates for both public and private schools was as follows: Eighth grade, 1,900,000; high school, 1,275,000; college, 175,000.

Teachers in elementary schools totaled 700,000 for the school year (625,000 in public schools and 75,000 in private schools); high school teachers numbered 350,000 (315,000 public and 35,000 private). There were 115,000 one-teacher schools having an estimated 2,520,000 pupils. The number of pupils to be transported at public expense was 4,600,000.

Higher Education. For detailed statistics, see UNIVERSITIES AND COLLEGES.

State School Systems. The latest final figures on public education in the United States pertain to the school year 1937-38 and were published in 1941 as the result of the Biennial Survey of Education in the United States conducted by the U.S. Office of Education. In that year there were 25,975,108 pupils enrolled in the State School Systems of continental United States; 13,185,970 were boys and 12,789,138 girls; 19,748,174 were in kindergartens and elementary schools and 6,226,934 in secondary schools. The average daily attendance was 22,298,200.

The instructional staff comprised 4,965 supervisors, 36,484 principals, and 877,266 teachers, a total of 918,715 persons, who received an average annual salary of \$1,374. Of the total, 184,923 (21.1 per cent) were men. Private and parochial schools employed 95,103 teachers and enrolled 2,687,483 pupils in elementary and secondary grades; Catholic schools 79,194 teachers and 2,431,289 pupils.

Total expenditures in all public schools were \$2,233,110,054, a total cost of \$17.15 per capita for education. The cost per pupil enrolled was \$76.39 for current expense and \$9.20 for capital outlay. There were 229,394 school buildings in the country, of which 121,178 were one-room, one-teacher schools. The value of public property used for school purposes was \$7,115,377,402. Separate schools for Negroes are maintained in the District of Columbia and 17 States where 25 per cent of the population is Negro; enrollment in these schools was 2,411,967. They were accommodated by 60,641 teachers and 1,088 supervisors.

See also the section on *Education* under each State.

Trends. According to the U.S. Commissioner of Education, John W. Studebaker, the training of

workers for defense jobs would continue to increase in 1941-42. Enrollments in Federally-aided vocational schools and classes, which rose from 1,247,000 in 1935 to 2,290,000 in 1940, were expected to increase proportionately for the ensuing year. Colleges and universities were organizing more short-course defense-training classes. As a result of the entry of men into the Army, there was a rise in the number of women teachers and in the proportion of women students in colleges.

The low birth rate of several years ago resulted in decreased enrollments in kindergartens and elementary schools. By the same token, a decrease in high school enrollments might have been expected, but on the contrary they increased from 7,234,000 estimated for 1940-41 to 7,334,000 for 1941-42. The increase was attributed in part to higher compulsory school-attendance age in many communities, greater emphasis upon vocational preparation, and financial aid to students. About seven of every ten young people of high school age are now enrolled.

Although the number of R.O.T.C. schools has not been increased in the past five years, R.O.T.C. enrollments have jumped from 168,000 in 1939-40 to 197,000 in 1940-41; 125 civilian colleges and universities register 11,000 enrollees and 82 high schools 59,631 enrollees.

See also EDUCATION; the various States under *Education*; ARCHITECTURE. For foreign statistics, see the articles on the various countries. For specialized schools see the subject, as ART, DENTISTRY, LIBRARY PROGRESS.

SCIENCES. See the article on each branch of science; articles on government agencies, as NATIONAL INVENTORS COUNCIL; scientific groups under SOCIETIES. For the NATIONAL ACADEMY OF SCIENCES and the NATIONAL SCIENCE FUND see under ACADEMY OF SCIENCES.

SCIENTIFIC RESEARCH AND DEVELOPMENT, Office of. For the purpose of assuring adequate provision for research on scientific and medical problems relating to the national defense, the President established, through an Executive Order dated June 28, 1941, within the Office for Emergency Management of the Executive Office of the President, the Office of Scientific Research and Development. Dr. Vannevar Bush, President of the Carnegie Institution of Washington, was appointed the first Director of this new Office. The present headquarters are located at 1530 P Street, N.W., Washington, D.C.

The Office of Scientific Research and Development comprises within its organization an Advisory Council of which the Director is Chairman, the National Defense Research Committee of which Dr. James B. Conant, President of Harvard University, is Chairman, and the Committee on Medical Research of which Dr. A. N. Richards of the University of Pennsylvania is Chairman.

Members of the Advisory Council, the National Defense Research Committee, Committee on Medical Research and members of major committees and sub-committees appointed by the Director serve in such capacities without governmental compensation, their services being made available as a contribution to the defense research program.

The Office of Scientific Research and Development, broadly speaking, is intended as a coordinating agency and it is expected that the National Defense Research Committee and the Committee on Medical Research will be the principal groups through which it operates in carrying out the

duties with which it has been charged. In performance of its functions, the new Office is authorized to utilize the laboratories, equipment and services of governmental agencies and institutions to the extent that such facilities are available for its purposes. The Director is also empowered to contract with and transfer funds to existing governmental agencies and institutions and to enter into contracts and agreements with individuals, educational and scientific institutions, industrial organizations and other agencies for studies, experimental investigations, and reports. It is expected that necessary activities will be carried out so far as possible through existing organizations and to this end numerous contracts have been entered into with institutions of these several classes. These contracts are intended to cover actual out-of-pocket expenses, together with a reasonable allowance of overhead, with the expectation that the contractor will neither gain nor lose through the undertaking.

Although the Office of Scientific Research and Development is charged with initiation and support of scientific research on the mechanisms and devices of warfare, this function should not be confused with that of the National Inventors Council, Department of Commerce, which is the agency established to receive and review inventions and suggestions that might prove valuable to the national defense.

VANNEVAR BUSH.

SCOTLAND. See GREAT BRITAIN under *Area and Population*.

SCULPTURE. See ART.

SECOND INTERNATIONAL. See SOCIALISM.

SECRET SERVICE, U.S. The U.S. Secret Service, a division of the Treasury Department, has as its chief duties the protection of the President of the United States, members of his family, and the President-elect; the policing of the White House and its grounds; the suppression of the counterfeiting and alteration of all Government obligations, and the protection of Treasury buildings, money and securities.

In its "Know Your Money" program of crime prevention through education, inaugurated by Chief Frank J. Wilson in 1940, the Secret Service has proven that the crime of counterfeiting can be prevented by teaching Americans to know the difference between good and counterfeit money. For the fiscal year ended June 30, 1941, victims of the counterfeiter lost only \$91,000, a decrease of 88 per cent from the 1936 average. Beginning with the 1941 fall semester, the Secret Service succeeded in introducing into junior and senior high schools in all parts of the country its 32-page "Know Your Money" booklet, to be used by the schools in their regular curricula.

In 1941 the Secret Service made a total of 2,949 arrests. Offenders included makers or passers of counterfeit bills, makers or passers of counterfeit coins, makers or passers of altered currency, forgers of Government checks, violators of the Gold Reserve Act, persons who counterfeited or altered stamps, violators of the Federal Farm Loan Act, persons making false claims against the Government, and others who committed miscellaneous offenses.

Secret Service Agents received or captured counterfeit and altered notes in the amount of \$109,411, a decrease of \$127,923, or 53.9 per cent as compared with 1940. A total of 18,225 criminal, and 4,731 non-criminal cases were referred to the

Secret Service for investigation during the fiscal year 1941. In cases brought to trial there were 2,572 convictions and 76 acquittals. The percentage of convictions totalled 97.1 per cent, which was exactly the same percentage as for the fiscal year 1940. Fines in criminal cases totalled \$102,420, and imprisonments totalled 2,719 years, 3 months, 23 days and 10 hours. Additional sentences totalling 2,901 years, 6 months, 26 days, were suspended or probated.

The involvement of the United States in war is not expected to cancel the long-range educational program of the Secret Service. However, the war will bring about numerous new and vital assignments the completion of which will make it necessary to lessen the intensity of the crime-prevention effort

FRANK J. WILSON.

SECURITIES AND EXCHANGE COMMISSION (SEC). See FINANCIAL REVIEW under *Financial Regulation*; also, BUSINESS REVIEW under *Commercial Failures*, ELECTRIC LIGHT AND POWER
SECURITY MARKETS See FINANCIAL REVIEW, also, BANKS AND BANKING.

SEISMOLOGY. The progress of seismology is affected by international events, and it is not certain that the latest news from Europe regarding any branch of scientific work correctly represents the actual situation, however, reports are being received in the United States from many countries, belligerent, occupied, and neutral. Despite these reports it is difficult to appraise just what has happened to the various seismological stations. In contrast to the lack of information about the actual work being done by seismological stations in other parts of the world is the steady progress which is being made in the United States. The number of papers on the subject published during the year compares favorably with that for any previous year. To meet the apparent demand for a simple low-priced seismograph, the Sprengnether vertical seismograph was completed and tested near the beginning of the year with satisfactory results. This instrument should provide amateur seismologists with a cheap apparatus for carrying on their interests in seismology. Tests showed that this instrument will not only produce good records of local earthquakes, but also will react to the shorter periods in the beginning of distant earthquakes.

LaRocque has made a study of the behavior of water in wells during earthquakes, for his investigation he used records from 24 wells in California which had water-level recorders. He found that two of these wells recorded the great Turkish earthquake of December, 1939, which was over 7,000 miles distant. For earthquakes occurring in California all of the wells usually record the shock. In the case of the Long Beach earthquake of 1933 he found that it was easy to plot lines of equal water-level surge in the wells; the surge was just over 10 feet in wells 15 miles northeast of the epicenter. These lines of equal water-level surge do not follow the isoseismal lines as one might at first think. It appears that the amount of surge in wells may be controlled to a considerable degree by the thickness, perviousness, and elasticity of the water-bearing zones in the soil and also by the location of beds impervious to water. Other curious features about the surge of water in wells caused by earthquakes are that some wells are unaffected while nearby ones will record a surge, and that remote wells may record a surge which wells close to the epicenter do not show. Thus in the El Centro, Calif., earth-

quake of 1940 twelve wells in California failed to record any surge, while ten wells of the fourteen in Florida which were equipped with water-level recorders recorded the surge. A possible explanation of this is that the wells in Florida are located in limestone which is quite uniform and that earthquake waves would be transmitted more uniformly through this rock than through the diverse and complexly faulted consolidated rocks and the discontinuous bodies of unconsolidated rocks in California.

There were no earthquakes of outstanding severity during 1941. There were, of course, the usual number of quakes and some did damage. (For an estimate on the usual number of earthquakes each year, see the 1940 YEAR BOOK, EARTHQUAKES.)

An earthquake occurred in Cyprus on January 20, it was reported that many buildings collapsed or were damaged. The next one to cause appreciable loss was on March 1 when at about sunrise a severe quake shook many towns and villages in northern Greece. At Larissa, in Thessaly, houses were destroyed, telephone and telegraphs and other buildings were damaged, and some streets were blocked by debris. Extensive damage was caused at Ellassona and the epicenter may have been near this place. The shock was also felt at Volo and Lamia, Kanditsa, and Trikkala. In the whole district there may have been as many as 15,000 people made homeless; although this is a large list, only one person was reported killed. The war hindered the collection of accurate news as to the exact damage

Perhaps the most damaging quake of the year occurred in Mexico on April 15. It took place about noon local time; more exactly, 19 hours 10 minutes G.M.T., and the epicenter was 18.8 degrees north latitude and 103.0 degrees west longitude. The states most affected by this earthquake were Aguascalientes, Colima, Guanajuato, Jalisco, Mexico, Michoacan, Puebla, and Tlaxcala, and the isoseismal lines were elongated in an east to west direction. The towns most affected were Guadalajara, Manzanillo, Mexico City, and Colima. At the last named place, a town with a population of 20,000, the first shock caused the dam guarding the water supply to collapse, disrupted power lines, and caused half of the buildings in the town to fall. The cathedral, built after the earthquake of 1932, was destroyed, and during the night forest fires blazed round the town due to the scattering of charcoal kilns by the earthquake. A nearby volcano which erupted at this time also helped to spread forest fires. In addition to the property damage it was reported that 36 people lost their lives in Colima. In Mexico City, towers and signs swayed, church bells tinkled gently, windows rattled, and pavements cracked. The city's tallest skyscraper, a 17-story building at the corner of the Paseo de la Reforma and the Avenida del Ejido, was shaken and a five-story section of glass and facing stone crumbled. Fires broke out, and one destroyed the El Monte lumber yard after firemen had fought the blaze for 6 hours. No one was killed in Mexico City, although property damage totalled \$800,000. The total damage throughout Mexico was about double this amount, and 84 people were killed.

An earthquake of considerable intensity took place on May 6 in northern Manchoukuo. The epicenter was near Suihwa, 40 miles northeast of Harbin where 33 were killed and several were injured and more were killed in nearby towns. A severe earthquake just before noon, Greenwich time, on June 26 had its epicenter near the Nicobar Islands in the Bay of Bengal, northwest of Sumatra.

This earthquake is not notable for the amount of damage done, for not all of these islands are inhabited, but rather for the large amplitudes which it caused on the seismographs of the world.

During the night of July 16-17 a strong earthquake shook the northern part of the Nagano Prefecture, some 140 miles from Tokio, in Japan. Some 30 houses were destroyed and railway service was interrupted. An earthquake with its epicenter near Agri, 70 miles east of Erzurum in Turkey, was reported on September 12; the death toll was about 500. A severe quake occurred in Quetta and the surrounding country in Baluchistan (India) shortly after 8 o'clock, local time, on September 29. This shock was also felt, though less distinctly, at Sibi, Mach, and Chanan, all in Baluchistan. The quake lasted for about 35 seconds and was accompanied by heavy rumbling. Telephone and telegraph communications were temporarily dislocated, but no serious damage or casualties were reported. This lack of damage was probably due to the thorough rebuilding of the new city after the calamitous earthquake of 1935.

In December an earthquake was reported in Formosa, but the war prevented the report of its precise intensity or the exact extent of the damage.

RICHMOND T. ZOCH.

SELANGOR. See BRITISH MALAYA

SELECTIVE SERVICE SYSTEM. Section 5 (b) of the National Defense Act of 1920 reads in part: "The duties of the War Department General Staff shall be to prepare plans for National Defense and use of the military forces for that purpose, both separately and in conjunction with the naval forces, and for the mobilization of the manhood of the Nation and its material resources in an emergency . . ."

Under this authority, officers of the War and Navy Departments joined in the creation of the Joint Army and Navy Selective Service Committee in 1926 and began preparation for mobilization of the nation's manpower in crises. On Sept. 16, 1940, the President signed the Selective Training and Service Act of 1940, designed to put into effect the plan for Selective Service as adopted by the Congress.

The Act originally called for the annual training of not more than 900,000 men at any one time in the land and naval forces of the United States, the classification of millions of others on the basis of their availability and general qualifications for use in military and civilian endeavors in times of emergency, and the development of a sizable reserve composed of men trained in the various branches of the armed forces. Subsequent legislation, approved on Aug. 18, 1941, eliminated the 900,000-man restriction, however.

Also, as the act provides that no man who has sincere scruples against bearing arms shall be required to serve in the combatant forces, the Selective Service System has worked with other Federal agencies and interested organizations in devising a system whereby conscientious objectors may serve the nation. Not only has provision been made for use in noncombatant units, such as the Army Medical Corps, of those men who, while opposed to bearing arms, are willing to assist combatant units, but a program for the employment of those who object to any service whatever with the Military Establishment is also being carried out. Through the cooperation of religious organizations, the Department of Agriculture, the Department of the Interior, and the War Department, the latter group of objectors is being sent to camps where, under

civilian direction, they are engaged in soil conservation, forestry projects, and similar public work.

The men who serve in work camps are not eligible, however, for reinstatement in former jobs or placement in new positions as are the men who serve in the armed forces. Placement of the latter group is a function of the Selective Service System and one upon which it is working through its re-employment division.

When the President signed the Selective Training and Service Act, he issued a proclamation fixing Oct. 16, 1940 as the first day of registration for all male citizens and all male aliens between 21 and 36 years of age who were residing in the United States. On the first registration day approximately 16,400,000 men registered for service. Registrations were held in Hawaii on October 26, Puerto Rico on November 20, and Alaska on January 22.

Following the registration of October 16, a national lottery was held in Washington to determine the order in which prospective trainees would be classified on the basis of their availability for military service. The War Department also announced its schedule for calling the new civilian soldiers and the first group was inducted during November of 1940.

Although the original schedule called for the induction of 800,000 men by July 1, 1941, an unexpected number of regular enlistments in the armed forces permitted a reduction so that only approximately 650,000 men were called by July 1. By Jan. 1, 1942, approximately 1,000,000 men were inducted into the armed forces through the process of the Selective Training and Service Act.

The Selective Training and Service Act authorizes the organization of a National Headquarters of the Selective Service System in charge of a Director of Selective Service. This executive may be a civilian or a member of the Military Establishment. The Selective Service System is a separate civilian component of the Government and is not under the jurisdiction of the War, Navy, or other departments; it is a part of the executive branch of the Government and reports directly to the President. As the entire program of Selective Service calls for a decentralization of its operations, National Headquarters serves primarily as a coordinating agency for the various headquarters set up for the individual States, Alaska, Hawaii, Puerto Rico, and the District of Columbia. National Headquarters also serves as a liaison agency between the War and Navy Departments and the general public, and when called upon to assist in supplementing the manpower of the armed forces in turn calls upon the individual State headquarters to furnish the men required for training and service.

In furtherance of the decentralization policy, each State Governor is charged with the enforcement of the Selective Service program in his State. He may designate a State Director of Selective Service as the official in charge of his State headquarters. In the majority of instances such assignment has been made to the Adjutant General of the State National Guard. Individual State headquarters coordinate the work of the various appeal boards, medical advisory boards, registrants' advisory boards, local boards, and other Selective Service units and agents under their jurisdiction. The local boards maintain direct contact with the prospective trainees, their families, and employers. Their power is virtually autonomous and their decision as to a registrant's classification is final except when an appeal is noted. On the basis of their study, registrants are classified in one of the following classifications and subclassifications:

Class I.

- Class I-A Available; fit for general military service.
- Class I-B Available; fit only for limited military service
- Class I-C Member of land or naval forces of the United States
- Class I-H Men deferred by reason of age

Class II.

- Class II-A Man necessary in his civilian capacity, the maintenance of which is necessary to the national health, safety, or interest in a sense that it is useful or productive and contributes to the employment or well-being of the community or the Nation
- Class II-B Man necessary in his civilian capacity, the maintenance of which is essential to the national health, safety, or interest in a sense that a serious interruption or delay in such activity is likely to impede the National Defense Program

Class III

- Class III-A Man with dependents

Class IV

- Class IV-A Man who has completed service
- Class IV-B Official deferred by law.
- Class IV-C Nondeclarant alien
- Class IV-D Minister of religion or divinity student.
- Class IV-E Conscientious objector available only for civilian work of national importance
- Class IV-F Physically, mentally, or morally unfit

At the present time only those men who are in Class I-A, those immediately available and fit for general military service, are being inducted into the armed forces. In this connection, it was found that 1,000,000 men out of the first 2,000,000 registrants examined were physically or mentally unfit for general military service. Studies of the rejected cases indicated, however, that 200,000 of them were correctable and on Oct. 10, 1941, President Roosevelt directed the Selective Service System to undertake a rehabilitation program to make these 200,000 men fit for general service. This program was inaugurated shortly thereafter.

On May 26, 1941, acting under authority of the Selective Training and Service Act, the President proclaimed July 1, 1941, as the second day of registration for men eligible for possible military training. This second registration was for young men who became 21 years old following the first registration day on Oct. 16, 1940, and for certain others who would have been eligible for registration had they been in the United States on the first registration day. On July 1, 1941, 752,170 men in the continental United States registered for service. A second national lottery was held on July 17, 1941, and the new registrants were integrated among the lists of former registrants and are classified as their order numbers are reached.

All members of local boards, appeal boards, medical advisory boards, registrants' advisory boards, and local board physicians serve without pay.

Since enactment of the Selective Training and Service Act, which expires May 15, 1945, Congress has made certain important changes in its provisions. Although the original act provided for the training and service for men between the ages of 21 and 36, an amendment was approved on Aug. 16, 1941, reducing the age limit. This amendment reads in part: "There shall be deferred from training and service, under this act, in the land and naval forces of the United States until Congress shall declare otherwise, the men who, on the first day of July, 1941, or on the first day of July of any subsequent year (1) are liable for such training and service, (2) have not been inducted into the land or naval forces for such training and service, and (3) have attained the twenty-eighth anniversary of the day of their birth." Volunteers under this age limit may be inducted.

The original act provided for a peacetime training period of not more than 12 months but, by an

amendment approved Aug. 18, 1941, Congress extended the period of service to not more than 30 months in time of peace. This same legislation also provided that selectees should receive the sum of \$10 for each month of training and service in excess of 12 in addition to the amounts otherwise payable to them.

With the entry of the United States into War, important changes were made by Congress in the Selective Service Act in December, 1941. Faced with the necessity of recruiting an Army for war time service rather than one for peacetime training, Congress enacted legislation requiring that registration of all eligible men between the ages of 18 and 64, inclusive, be accomplished. This same legislation provides, however, that only those men who are between the ages of 20 and 44, inclusive, are liable for combat service in the armed forces of the United States.

To register the additional manpower, President Roosevelt first proclaimed Feb. 16, 1942, as the third registration day in the United States, paving the way for the enrollment of approximately 9,000,000 men in addition to those previously registered. At the time of the proclamation for the third registration, the President withheld registration dates for the enrollment of the men in the groups outside the military age limit.

Another important legislative change made by the Congress in December was the removal of the restriction in the original Selective Service Act of 1940 which precluded the use of drafted selectees outside of the Western Hemisphere or the territories and possessions of the United States, including the Philippine Islands.

Although the entry into war made it apparent that the armies of the United States would be greatly increased and that the recruitment schedule of the Selective Service System would be stepped up correspondingly, the War Department, soon after the declaration of hostilities, banned the issuance of information which would indicate to the enemy the size of American armies of the future.

Brig. Gen. Lewis B. Hershey was appointed director of Selective Service by President Roosevelt on July 31, 1941, to succeed Clarence A. Dykstra, president of the University of Wisconsin, who resigned Apr. 1, 1941, after a six-months tenure of office. General Hershey has been associated with the manpower recruitment program since 1936, when he was appointed executive officer of the Joint Army and Navy Selective Service Committee.

See CIVIL SERVICE COMMISSION, DENTISTRY; FEDERAL BUREAU OF INVESTIGATION, UNITED STATES under *Legislation*.

LEWIS B. HERSHEY.

SENATE, U.S. A list of U.S. Senators as of Jan. 3, 1941, appears on page 674 of the YEAR BOOK for 1940. Since there were no elections to the Senate in 1941, there were only six changes in membership during the year. Three were caused by the deaths of Sheppard of Texas, Harrison of Mississippi, and Adams of Colorado (see *NECROLOGY*) and three by resignations—Neely of West Virginia, Miller of Arkansas, and Byrnes of South Carolina. The new Senators, when the second session of the 77th Congress convened in January, 1942, were: for West Virginia, Joseph Rosier; Arkansas, Lloyd Spencer; Texas, W. Lee O'Daniel; Mississippi, Wall Doxey; South Carolina, Burnet R. Maybank. The seat of Senator Adams of Colorado remained vacant.

Chairmen of some of the important standing committees of the Senate were: Appropriations, Carter Glass, Va.; Banking and Currency, Robert

F. Wagner, N.Y.; Education and Labor, Elbert D. Thomas, Utah; Finance, Walter F. George, Ga.; Foreign Relations, Tom Connally, Texas; Military Affairs, Robert R. Reynolds, N.C.; Naval Affairs, David I. Walsh, Mass.; Rules, Harry Flood Byrd, Va.

SENEGAL. See FRENCH WEST AFRICA.

SERBIAN ORTHODOX CHURCH. See RELIGIOUS ORGANIZATIONS.

SERVICE ASSOCIATIONS. See CONSUMERS' COOPERATIVES.

SEVENTH DAY ADVENTISTS. See ADVENT MOVEMENT; RELIGIOUS ORGANIZATIONS.

SEWERAGE AND SEWAGE TREATMENT. The vast and ever increasing progress of national defense requires the construction of scores of new sewerage systems for training camps, housing projects and plants for the production of aircraft, armament, and munitions. Existing sanitary facilities at army camps and forts require enlargement. Cities in and near which defense industries are located must enlarge their sewerage systems by extensions into newly built-up areas and reinforcement of trunk sewers. All this means the construction of new or enlargement of old sewage treatment works in line with the intensified campaign against discharging sewage into streams, lakes, or tidal waters without whatever degree of treatment may be required to meet local conditions. Vast quantities of nuisance-producing trade wastes create special problems of disposal, whether tributary to municipal sewers or requiring separate handling. To meet these many and various problems a vast civil army of trained engineers and chemists are being pressed into service to design and operate extensive works while a much larger body of civilians is engaged in construction.

Early in the year the War Department engaged two leading firms of consulting engineers to formulate principles to guide sewage disposal at camps and cantonments. The recommendations covered assumed quantities of sewage per capita, strength of sewage, flow-measuring devices, grit chambers, bar screens, primary settling tanks, trickling filters, final settling tanks, sludge digestion tanks, and drying beds. Which process or combination of processes should be used at any location would depend on the volume, character, and use of the water into which the sewage was to be discharged, probable degree of permanence of the project, and adaptability to speed in both design and construction. Disinfection of the final effluent by chlorination was advised. ("Sewage Treatment for Army Camps," *Engineering News-Record*, March 27, 1941.) At Camp Crowder Cantonment near Neosho, Mo., 410 engineers and 20,000 construction men were engaged.

New York City is continuing its extensive program of constructing treatment works to serve various districts of its large area. At the immense activated-sludge plant on Wards Island, the gases arising from the tanks in which the sludge is stored before shipment are deodorized by passing through activated-carbon filters and by the application of ozone—believed to be the only plant where this method is used. A small plant for Greenport, Long Island, treats sewage in Imhoff tanks. The tank sludge is dried in glass-covered beds. To protect oyster beds this tank effluent is disinfected by chlorine before its discharge into Peconic Bay. The Atlantic City Sewerage Company in New Jersey also chlorinates sewage to protect shellfish. The Chicago Sanitary District has built works to treat

or partially treat practically all of the sewage of Chicago and vicinity, but is unable to complete all of the plants owing, first, to its financial situation and later to the National Defense Program and inability to obtain priorities. The combined sewage flow averages over a billion gallons a day. The Sanitary District has been denied its petition to the U.S. Supreme Court for a review of the decision requiring it to pay royalties for its use of the activated-sludge process before the patent expired in 1935, but at the close of the year no steps had been taken towards an accounting. Large sewage disposal projects at Philadelphia, Penn., Louisville, Ky., Los Angeles, Calif., and Toronto, Canada, are still pending, due to financing problems or war conditions. A comprehensive plan for the disposal of the sewage of Cincinnati, Ohio, includes ultimate construction of four treatment works with a combined daily capacity of 138 million gallons. Late in the year a board of consulting engineers recommended that the East Bay Municipal Utilities District should build sewage disposal works for Oakland and five other cities.

A notable feature of sewage treatment progress is the increasing utilization of gas from sludge digestion tanks for power. ("Gas Engines Develop 35,000 Horse-power" at 115 sewage treatment works. *Year Book*, American Public Works Association, 1941; abstracted in *Sewage Works Engineering*, 1941; New York.)

Charging for the use of sewers, to meet at least a part of the cost of that service instead of adding it to the heavy burden of general taxation, is practiced by at least 170 American cities, including Buffalo, Detroit, Minneapolis, and Seattle. (*Year Book of the City Managers' Association*, 1941, Chicago.)

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M. N. BAKER.

SEYCHELLES. See BRITISH EMPIRE.

SHAN STATES. See BURMA.

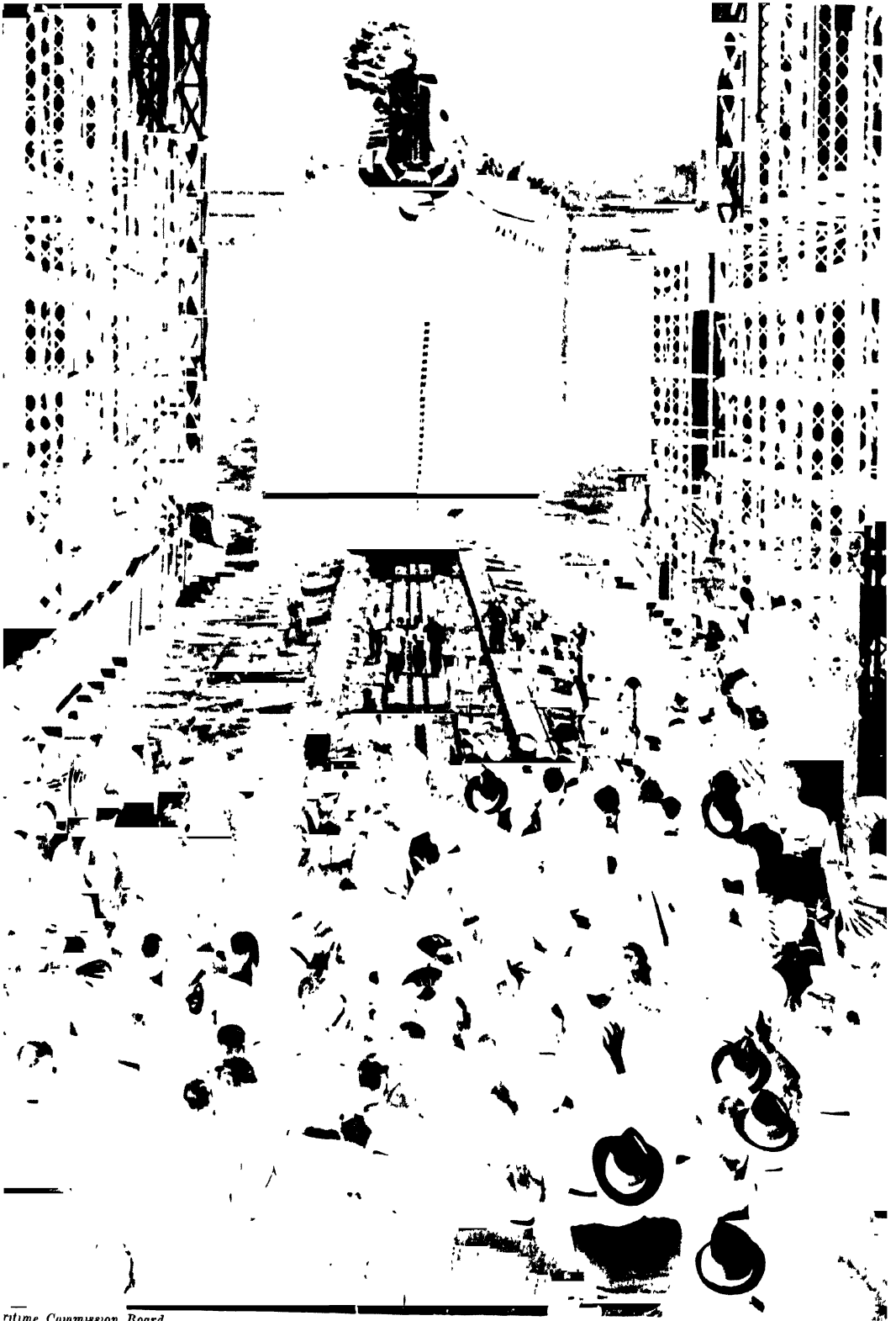
SHEEP. See LIVESTOCK; WOOL.

SHIPBUILDING. More merchant ships were worked on in the United States during the past year than in any previous year. Although reports on foreign tonnage are not available, yards in England, Scotland, northern Ireland, and Europe were feverishly active in the building of ships to replace those sunk by submarines and aircraft.

In the United States, besides the long range program started by the Maritime Commission in 1937 for building standard types of cargo and cargo-passenger vessels to meet the requirements of United States foreign trade, the Commission announced in January, 1941, its emergency construction program for two hundred 10,000-ton deadweight cargo ships.

Even while the details of the Emergency Program were being worked out, the demand for a further expansion of shipbuilding under the Lend-Lease Act was being considered by the Commission. On April 14, the President allocated Lend-Lease funds to the Commission, which promptly entered into negotiations with shipyards for the building of 227 additional cargo vessels and tankers. Because of increased sinkings of British and Allied vessels, on August 25, the President approved another program authorizing the construction of 541 more cargo vessels and tankers, and 25 seagoing tugs.

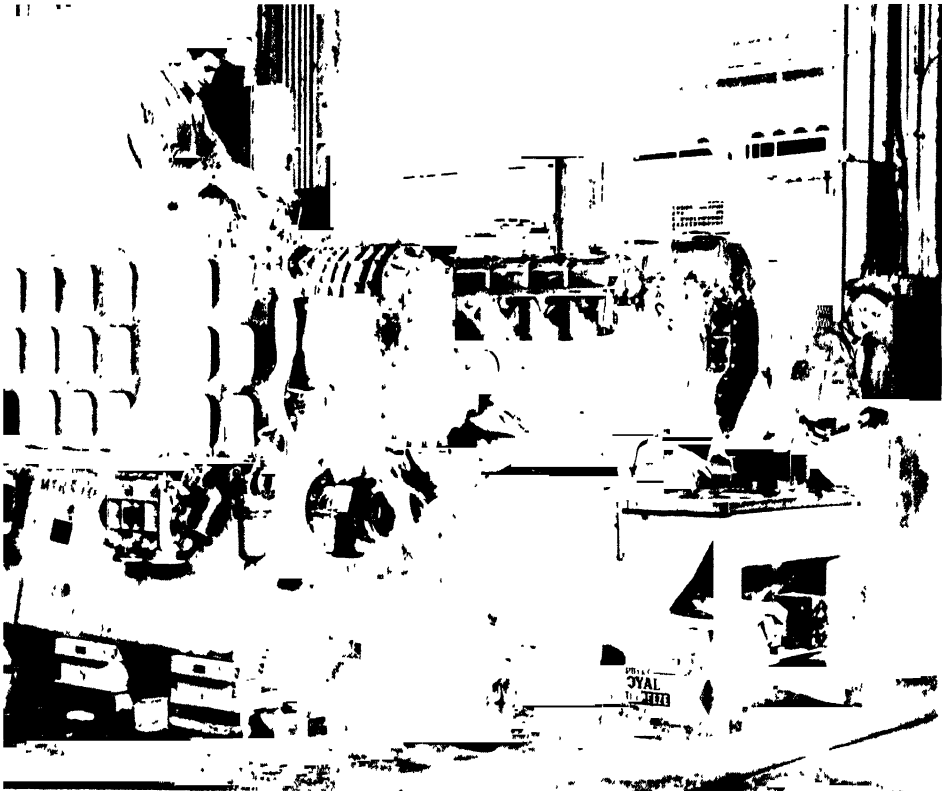
The ships of the Lend-Lease and Emergency



ritime Commission Board

LAUNCHING THE FIRST LIBERTY SHIP

Leading a new series of U.S. merchant vessels, the S.S. *Patrick Henry* slid down the ways at the Bethlehem-Fairfield yard in Baltimore on September 27.



U. S. Maritime Commission

HUGE DIESEL ENGINES FOR THE U S NAVY HAVE REPLACED AUTO ENGINES ON THIS ASSEMBLY LINE

VIEW OF THE KEEL OF THE S.S. PATRICK HENRY DURING CONSTRUCTION IN THE BALTIMORE YARD

Programs are somewhat simpler in design than those of the Long Range Program (see 1940 YEAR BOOK), having in view the building of serviceable cargo vessels in the shortest possible time. The Liberty ships of the Lend-Lease and Emergency Programs have an overall length of 441 ft. 6 ins., beam 57 ft., depth 37 ft. 4 ins., total displacement 14,100 tons, and will carry a general cargo of 9,146 tons. They are of the single screw, full scantling type, with raked stem and cruiser stern, having seven main transverse bulkheads providing five cargo holds. The engine and boilers are located amidships in a single compartment. Speed 11 knots, as against 15½ knots of the Maritime Commission C-2 vessels of the Long Range Program. Besides cargo ships, many large tankers were built, several of which were taken over by the Navy Department. Some of the cargo-passenger vessels were requisitioned by the Army and Navy for troop ships and other purposes.

Shipyards on Atlantic and Pacific coasts, Gulf of Mexico, Great Lakes, and on the Mississippi and other inland waters were very busy. On the Great Lakes, cargo vessels, mine sweepers, small tankers, and other craft that on completion could pass through canals into the St. Lawrence river were contracted for. On inland waters many steel welded barges and tow boats were built. Canada carried out a large shipbuilding program estimated at over \$130,000,000. According to the American Bureau of Shipping records on October 1, 1,011 vessels aggregating 5,794,090 gross tons were under construction in United States shipyards for classification with the American Bureau. Included were 765 ocean going vessels of 5,638,920 tons; five ships of 55,000 tons for Great Lakes service; 239 of 99,450 tons for miscellaneous service; one composite ship of 40 tons, and one wooden vessel of 180 tons.

Several of the shipyards were plagued with strikes, and construction was delayed by disputes between the A.F.L. and the C.I.O. The worst strike of the year was at the Federal Shipbuilding Company, Kearny, N. J., which was finally taken over by the Navy Department. There were strikes on the Pacific coast among welders which seriously retarded work in many yards.

Hull Construction. Vessels of the Long Range Program were largely of welded construction, as were those of the Lend-Lease and Emergency Programs, but the latter were designed primarily for speed in building yet with ample strength to meet the requirements of the American Bureau of Shipping. To speed up construction the hull of a vessel was divided into sections, the plates and shapes being assembled on the ground and then hoisted into position on the building way. Both automatic and hand welding were employed, with the result that fabricating of plates and shapes progressed rapidly.

The growth of welded ships in the United States is shown in the American Bureau of Shipping report of October 1. At that date 298 ships under 300 feet long were to be all welded except one small survey vessel. Of 711 large ocean-going vessels, 207 were to be completely welded, and in the remainder welding was to be extensively employed. In November, largely for emergency purposes, contracts were awarded for several reinforced concrete barges.

The time elapsing from laying the keel to launching has been noticeably reduced by standardization and improved methods of construction. At one time, at least a year was required to build the hull to the launching stage, but several United

States yards now take only a few months. This speed in building the hull, plus the standardizing of the machinery, makes possible the delivery of a completed vessel ready for sea, in a year or less.

Sept. 27, 1941, or Liberty Flag Day, was a notable one in United States shipbuilding activities. Fourteen merchant ships were launched from various yards on that one day. Over 130 vessels were completed in 1941 and this number will be exceeded in 1942. Additional ways have been added at many shipyards, expected to be capable of producing approximately 6,500,000 deadweight tons of ships per annum.

Marine Engineering. As improved means were developed in hull construction, so improvements have been made in the designing and building of boilers, turbines, Diesel and steam engines, and their auxiliaries. Fire-tube boilers of the Scotch type were largely replaced in modern cargo, passenger vessels, and in tankers by water-tube oil-fired boiler, generating high-pressure steam which was further superheated. Such steam was fed to high-speed turbines that through reduction-gears drove the propeller shaft. High-pressure water-tube boilers and geared turbine units were installed on a large number of Maritime Commission ships, which have proved in service to have low fuel consumption and high efficiency.

An exceptional machinery installation of the past year was made in the *Examiner* (Maritime Commission C-3E design) of the American Export Lines. In this ship, the machinery was designed for 1,200 lb., whereas sisterships operate at 425 lb. per sq. in. The high pressure of 1,200 lb. required specially designed boilers and auxiliaries, as well as a geared turbine unit that was wider and had three cylinders instead of the usual two. A comparison in service of the *Examiner* with her sisterships will be of interest and will show if such pressures can be successfully used and if they have advantages over lower pressures for cargo ships.

On certain routes and conditions Diesel engines are an ideal form of power. During 1941 both direct drive and gear drive Diesels have been installed in ships. Designs have been refined, improved efficiency and reliability secured; in fact the modern Diesels are a thoroughly reliable unit for marine service. Besides cargo vessels and tankers, many tow boats for harbor and river service are driven by Diesels. One of the largest direct drive Diesels was the *Esso Williamsburg*, 521 ft. long between perpendiculars, 70 ft. beam, 40 ft. deep, cargo capacity 152,200 barrels of oil, having a 7,500 shaft horse-power Diesel, giving a speed of 15½ knots.

Steam engines of the three cylinder triple expansion type were installed in many of the emergency ships built for Great Britain, and in the United States "Liberty" ships. These engines were of improved design to those of the first World War. Besides triple expansion, an engine in which steam is completely expanded in each cylinder and all the cylinders are of the same size, known as the Unafflow, was installed on bay and inland water vessels. Notable installations are in the carferry *City of Midland* operated by the Pere Marquette Railway on the Great Lakes; and in the passenger and vehicular ferry *Pocahontas*, of the Virginia Ferry Co. running between Cape Charles and Little Creek, Va.

Turbine-electric machinery has been installed in several large tankers, and Diesel-electric in tugs and ferry boats. Electric driven vessels are easy to maneuver, particularly desirable in harbor op-

erating. See COAST GUARD, U.S.; NATIONAL INCOME; NAVAL PROGRESS.

CHAS. H. HUGHES.

SHIPPING. The war in Europe has continued to disrupt the service of all lines previously operating vessels from Europe to other continents, and has caused many changes in the service from the United States to foreign ports. The pre-war routes to England via Ireland, and to Plymouth, Southampton, and London, also to Scotland, are no longer safe because of German submarines and aircraft. Hence, other safer, though still dangerous routes, as from northern United States and Canadian ports to Iceland, and thence to Scotland, Northern Ireland, and England, were used for carrying supplies during the year.

Besides operating vessels to Iceland, Portugal, Spain, and some Allied ports in Europe, the United States continued to send ships to Australia, Asia, Africa, and South America. The runs from ports on the Pacific coast to Vladivostok, Siberia, developed some risks, because of uncertainty as to Japanese action. Passenger vessels made idle by war conditions were frequently run on pleasure cruises to the West Indies, and to South America; some were taken over by the Army and Navy. As a war measure, the publication of departure dates of vessels to many foreign countries was discontinued.

On Jan. 1, 1941, there were 141 ships totalling 832,673 gross tons in service to both coasts of South America, Central America, Mexico, and the West Indies. On September 1 in the same services there were 209 ships of 1,105,284 gross tons.

The number and tonnage of documented United States sea-going vessels over 2,000 gross tons has steadily declined according to the Bulletin of the American Bureau of Shipping of July 1, 1941, due to sale and transfer to foreign flags, and to the Army and Navy. At that date, merchant vessels of 2,000 gross tons and over, excluding those on the Great Lakes, included 1,136 passenger, cargo vessels, and tankers, with a total gross tonnage of 6,815,304.

War Losses. As to the number of Allied vessels sunk by the Axis powers, and the number of Axis vessels sunk by the Allies, very conflicting reports were published. A report from London early in October stated that sinkings in July, August, and September were about one third of those in the preceding three months, April, May, and June, a reduction to about 472,000 tons from the previous three months total of about 1,416,000 tons. With the assistance of the U.S. Navy, it is expected that the sinkings of Allied vessels will be still further reduced. It was reported that Italy lost several large troop ships in the Mediterranean Sea, and the Germans suffered heavy losses in the Baltic and Black Seas.

Maritime Commission. The Maritime Commission's defense program is concerned with the allocation of available vessels in such a way as to fill the defense needs of the United States and to aid countries fighting for democracy. To carry this out, the Commission set up a Division of Emergency Shipping. The chairman of the Maritime Commission stated before a House of Representatives committee on October 8 that 320 cargo ships would be required to transport materials ordered under the Lend-Lease Program to Britain, Red Sea ports, China, and the Near East—135 vessels for the Red Sea and Near East service, and 185 for the North Atlantic.

Throughout the year many acts of Germany

seriously affected United States shipping. These acts reached a climax late in September, and forced the President to state that German submarines operating on the route to Iceland would be eliminated, and hinted if sinkings continued then all United States vessels would be armed. As unwarranted attacking and sinking of United States and neutral vessels continued, Congress in November amended the Neutrality Act to permit the arming of merchant vessels. The arming and supplying of gun crews was done by the Navy Department. The first armed ships carried supplies over routes to Russia and British Isles, followed by others to the Red Sea and North Africa. With the amending of the Neutrality Act, about 45 American owned ships registered under the Panamanian flag were returned to American registry.

Freight and passenger traffic between United States and South America decidedly increased because of the war in Europe; many of the new Maritime Commission ships are in this service. The Maritime Commission approved an agreement whereby the Mississippi Shipping Co. and the Grace Line will cooperate in the booking and transportation of passengers on tours around South America. The Commission also approved a modification of an agreement of the West Coast South America-North Pacific Coast conference, to restrict voting on conference matters to members maintaining a regular service.

Ship Warrants Act. The Ship Warrants Act, under which the Maritime Commission fixes priorities in the interest of national defense, went into effect on September 25, and applied to all United States vessels (except inland water), and foreign vessels of 1,000 gross tons or over operating from United States ports.

Under the terms of the Act, the Maritime Commission can grant preference in the use of shore facilities to ships that cooperate in the national defense by following approved trade routes and by carrying essential cargoes. The Act protects the public by controlling transportation charges for carrying defense materials and freight intended for public consumption. Carriers receiving and holding warrants must not charge more than prescribed rates. Two classes of warrants were issued—Class A-1, given to vessels of more than 1,000 gross tons employed in the transportation of freight vital to national defense, and Class A-2, for vessels of more than 1,000 gross tons employed in the transportation of cargoes deemed by the Maritime Commission to be essential to the economic welfare of the United States. Applicants for warrants for vessels engaged in the business of servicing larger vessels must agree that before using a repair yard or dry dock capable of handling ships of 1,000 gross tons and over, they will clear requests for such dry docking through the Coordinator of Ship Repair and Conversion, New York City.

Inland Water Carriers. On the control of inland water carriers by the Interstate Commerce Commission, sufficient time has not elapsed to report on the operation of the Transportation Act of 1940, which includes Part III of the amended Interstate Commerce Act. Carrier representatives and members of the Commission held several conferences on uniform accounting and statistical requirements. The Transportation Act gives the Commission authority to prescribe classification of accounts to be adopted by water carriers subject to its jurisdiction, depreciation regulations, and the forms of the periodic reports to be made by carriers to the Commission.

Shipping on the Great Lakes was brisk. From

available reports, ore shipments for the 1941 season will be over 80,000,000 tons, which is higher than that of the previous year. Shipments of coal to upper Lake and Canadian ports were less, due to strikes and refusal of some ore carrying vessels to load coal on return trips; nevertheless, during the latter part of the season, coal shipments were heavy. Rates for grain loadings were advanced in October. Ore, bituminous coal, and stone (used in blast furnaces) shipped in 1941 exceeded 150,000,000 tons, which was more than the combined movement of all freights in any other year. Shipments in 1941 of grain, ore, steel, oil, and other commodities totalled about 165,000,000 tons.

Labor. Longshoremen and other unions called strikes on shipping companies, and besides such strikes there were many jurisdictional disputes between the A.F.L. and the C.I.O. One of the labor strikes against the Alcoa Steamship Co. was so serious that it came to the attention of the President, who ordered the vessels of this company to be kept running; otherwise they would be operated by the Government.

See COAST GUARD, U.S., DEFENSE TRANSPORTATION, OFFICE OF; INSURANCE, PORTS AND HARBORS, UNITED STATES under *Legislation*; WATERWAYS, INLAND, WORLD WAR; the countries under *Transportation* and GREAT BRITAIN and NEW ZEALAND also under *History*.

CHAS. H. HUGHES.

SHOCK TREATMENT. See BIOLOGICAL CHEMISTRY under *Vitamins*, PSYCHIATRY

SHOE INDUSTRY. World events had a disturbing effect on international trade in shoes in 1941 but it did not prevent a world production of shoes of over a billion pairs. Production of shoes, made wholly or partly of leather, exceeded half a billion pairs in North America, with the United States manufacturing 500 million pairs, Canada 30 million pairs and with expanding activity in Mexican and Central American factories. Shoe manufacturers in South America are supplying an increasing share of that continent's demand. Factories have been modernized in recent years and large quantities of manufacturing equipment imported. They have large supplies of raw materials and are making progress in low priced shoes.

In Europe, the shoe industry is hampered by many complicated problems developed as a result of the war, and manufacturers have found it impossible to maintain normal levels of production. Leather shoe production for military usage has increased at the expense of civilian demands. Approximately eighty per cent of shoe production in Africa is accounted for by factories in the Union of South Africa and Egypt. Reports indicate that production in these two countries has expanded during the current year.

In the United States 16,000,000 pairs of shoes were manufactured for the Army. Using top grades of leather, this caused some shortages in the leather market, but it had little disturbing effect on the manufacturing industry (the largest maker of army shoes finds them only five per cent of his total output). Increases in costs of material, labor, and taxes have contributed to a gradual but steady rise in the

retail prices of shoes. Some prices have risen ten to twenty per cent. Other lines, especially women's, will probably see their first increases this spring. The price of U.S. Army shoes, a good barometer, has risen from around \$2.50 in August, 1940, to \$3.65 in November, 1941.

World wide growth in the manufacture of rubber footwear fell off owing to the restrictions and in cases the cutting off of supplies of rubber.

JOHN F. W. ANDERSON.

SHOOTING. Rifle and Pistol. With defense activities outlawing the heavy caliber rifle, no less than 1,558 small-bore rifle and pistol shooters tramped off to Camp Perry, Ohio, to compete in the 1941 national tournament. Ransford Triggs, Madison, N.J., led in the small-bore dispute, and Mrs. J. W. Cole of Minneapolis in the N.R.A. Women's championship. In the pistol matches, Harry Reeves of the Detroit Police Department was "boss" man in the all-around aggregate, grand aggregate, center-fire aggregate, .45 caliber aggregate, and in eight of the events from which the aggregates were taken. Mrs. Mildred McCarthy of Allenhurst, N.J., took over the N.R.A. women's pistol title.

Skeet. Dismaying keen competition was the password at the national skeet tournament at Indianapolis C. H. Poulton of San Antonio, Texas, had a right to be proud of his all-gauge crown, for one shooter lost the title when he missed one bird out of 350. The women's title was awarded to Mrs. M. L. Smythe of Aurora, Ohio.

Trapshooting. Shooters at the Great American classic at Vandala, Ohio, saw Walter L. Tulburt of Detroit claim the Grand American prize, and Joe Hiestand of Hillsboro, Ohio, the Class AA championship.

SIAM. See THAILAND.

SIERRA LEONE. A British West African colony and protectorate. Total area, 27,925 square miles, of which the parts administered as colony (Sierra Leone peninsula, the Tasso, Banana, and York islands, and the town of Bonthe on Sherbro island) equaled 256 square miles. Population (1931 census), 1,768,480, including 96,422 in the colony. Freetown, the capital (64,329 inhabitants in 1939), has one of the finest harbors in West Africa.

Production and Trade. Kola nuts, palm oil and kernels, ginger, rice, groundnuts, piassava, cassava, hides, diamonds (600,000 metric carats in 1940), gold (32,676 fine oz. in 1940), iron ore, platinum, and chromite (10,755 metric tons in 1939) were the principal products. Trade (1939): £1,666,890 for imports and £2,207,892 for exports (diamonds, iron ore, palm oil and kernels, gold, chromite, and ginger were the main items). Roads (1940): 998 miles.

Government. Budget estimates: (1941) £887,648 for revenue and £969,456 for expenditure; (1940) £783,342 for revenue and £833,564 for expenditure. Net public debt (Dec. 31, 1939): £1,288,259. The colony and protectorate are administered by a governor, assisted by an executive council. There is a legislative council of 23 members (including the governor as president) which legislates for both the colony and the protectorate.

U.S. PRODUCTION & CONSUMPTION OF LEATHER SHOES IN 1941
(000 Omitted)

	Women's	Men's	Misses' & Children's	Youths' & Boys'	Infants'	All Other	Total
Production	193,500	118,000	48,000	19,000	27,500	79,000	500,000
Consumption (Estimated)	184,000	109,000	45,900	17,600	24,500	63,000	444,000

Governor and Commander-in-Chief, Sir H. C. Stevenson (appointed July, 1941).

History. Sierra Leone contributed to the war effort in many ways, including the use of Freetown harbor as a safe anchorage for ships carrying vital supplies to be assembled into convoys, the refortifying of the port of Freetown, and generous financial contributions to the Imperial government. In answer to a question in the British House of Commons, Mar. 26, 1941, the British Colonial Secretary said that special precautions were necessary in Freetown because it was an important port. He added that he was not aware of any general complaints of the suppression of freedom of speech, freedom of the press, freedom of meeting, or of an unnecessary curfew order, or that there had been established an internment camp to which were committed, among others, natives who have called attention to abuses of the law.

It was announced during May that some 30,000 troops were concentrated at Freetown. The sharp rise in rents in Freetown and other parts of the colony prompted the government to introduce legislation controlling rents on the basis of the rates in force on Aug. 1, 1940.

SILK. See TEXTILES; also, BUSINESS REVIEW; FASHION EVENTS.

SILVER. Total mine production of recoverable silver in the United States and Territories in 1941, according to the preliminary report of the U. S. Bureau of Mines, was 67,052,469 fine ounces valued at \$47,681,756. This was a 7 per cent decrease from the 1940 total of 71,824,746 oz. valued at \$51,075,375. The value was 71.1¢ per fine ounce both years. Idaho mined 25 per cent of the total production; 17 per cent came from Montana; Arizona and Colorado each contributed 11 per cent; Nevada, 9 per cent; California, 3 per cent; New Mexico, 2 per cent; other States, Alaska, and Puerto Rico, 2 per cent.

Silver has been found to increase the durability of many war materials, according to the annual report of Handy and Harman, bullion dealers, who have been engaged in a research program for increasing the industrial uses of silver. Silver and silver alloys at the end of the year were going into battleships, tanks, airplanes, and munitions. Silver has been found to prolong the life of much machinery. Pure silver bearings in airplanes increase speed and resistance to vibration. As a substitute for copper, nickel, aluminum, and tin, silver has released quantities of these scarcer metals for war requirements.

Consumption of silver in the United States and Canada in 1941 is estimated by this firm at 80,000,000 oz., an extraordinary increase of almost 95 per cent over the 1940 consumption figure of 41,000,000 oz. World production of silver in 1941 was roughly estimated at 275,000,000 oz., about the same as in 1940.

Acquisitions of silver by the U. S. government were estimated at 139,900,000 oz., the smallest annual total since the launching of the silver-buying program, and a decrease of 68,200,000 oz. from 1940. The year's acquisitions plus 3,140,100,000 oz. on hand at the beginning of 1941, amounted to Treasury holdings of 3,280,000,000 oz. on Dec. 31, 1941. This figure includes coin in circulation, in banks and the Treasury. United States exports for industrial purposes, January-April, 1941, were reported as being 783,000 oz. to Switzerland; 377,000 to Sweden; 38,000 to Finland; 6,000 to Portugal; 3,500,000 to India.

The market price for silver in New York was 34.75¢ an ounce, January-November, 1941, and 35.1¢ in December.

Western Hemisphere production of silver was estimated by Handy and Harman as follows:

WESTERN HEMISPHERE SILVER PRODUCTION <i>[In millions of fine ounces]</i>		
	1941	1940
United States	70	67
Mexico	79	86 3
Canada	22	25 4
South America	28	30
Central America and the West Indies	4 5	4 5
Total	203 5	213 2

SINARQUISTAS. See MEXICO under *History*

SINGAPORE. See BRITISH MALAYA; WORLD WAR.

SINKIANG. See CHINA under *Area and Population*.

SIRUP. See SUGAR.

SKATING. Beaten by eight-tenths of a point for North American honors, Eugene Turner of Los Angeles retained his national figure skating laurels in 1941 with an uncanny exhibition of grace and skill. He had lost by that slim mathematical margin to Toronto's Ralph McCreath in the North American—1,575 to 1,575.8. Miss Mary Rose Thacker won the women's North American, with Miss Eleanor O'Meara and McCreath sharing the doubles bauble. In the meet at Boston, wherein Turner took the national crown for the second successive year, Miss Jane Vaughan, University of Pennsylvania co-ed, took women's laurels. And meanwhile the art of skating artistically gained spectators, with the result that Miss Sonja Henie became one of the top box-office attractions of the year and drew 134,000 persons for eight performances in Madison Square Garden in New York. In all, fifty-six nights in the garden were turned over to figure skaters.

In speed skating, Ken Bartholomew of Minneapolis was top performer, taking the crowns in both the North American and national events. He annexed the national title at La Crosse, Wis., and a week later showed the way in the nationals at Schenectady, N. Y., taking both titles away from Leo Friesinger of Chicago, who was second at La Crosse, and third at Schenectady. Miss Carolme Landry, of Fitchburg, Mass., won both women's titles, dethroning Miss Madeline Horn, of Beaver Dam, Wis., in both instances.

SKIING. As skiing enthusiasts reached record proportions in the United States and Canada during the 1940-41 season, so did Torger Tokle, the young Norwegian, keep in step. His matchless skill brought him the distinction of winning twelve of thirteen meets, taking several major championships and setting seven hill records, and clearly earning him the right to be called the No. 1 competitor. Since coming to the United States, three years ago, he has taken thirty-one of thirty-four jumps and achieved seventeen new records.

In the national championships on Olympian Hill in Hyak Bowl, near Seattle, Wash., Tokle soared 288 feet to top his own national record of 273 feet. And also in addition to taking the Eastern and Central crowns, he broke meet marks at Lake Placid, Brattleboro, Bear Mountain, Duluth, and Laconia-Gilford. Toni Matt, Eastern Slope pro, won over the defending champion, Dick Durrance, in the national downhill and combined down-hill-slalom (open division), although Durrance managed to come through in the national open slalom. Alf Engen maintained his four-event title and regained the combined cross-country and jumping

championship. The national cross-country king was George Gustavson of California.

Amateur laurels went to Bill Redlin of the University of Washington, as he captured the downhill, slalom, and combined events at Aspen, Colo. In the women's division, Mrs. Gretchen Fraser of Sun Valley, S.C., won the downhill and combined down-hill-slalom. Barbara Shaw of Mount Mansfield, S.C., took both the open and restricted slalom titles, while Nancy Reynolds of Montclair, N.J., was returned the combined restricted amateur champion.

SLOAN FOUNDATION. See PHILANTHROPY.

SLOVAKIA. A former province of the Czechoslovak republic, proclaimed an independent republic by the provincial parliament on Mar. 14, 1939, and taken under German protection by a treaty signed Mar. 18, 1939. Capital, Bratislava (Lemberg). See CZECHOSLOVAKIA.

Area, Population, etc. Exclusive of territories ceded to Hungary and including areas transferred to the republic by Germany from Poland, Slovakia has an area of approximately 14,706 square miles and a population of 2,691,000 (Dec. 31, 1939 estimate). There were nearly 2,000,000 Slovaks, about 100,000 Germans, 180,000 Jews, 80,000 Hungarians, and 20,000 Ruthenians (Ukrainians). The population of Bratislava, capital and chief city, was 170,668 (estimated) in 1935. Roman Catholicism is the predominant religion.

Agriculture and forestry are chief sources of livelihood. Industry, mining, and commerce are of secondary importance. Production of wheat in 1939 was 321,600 metric tons; rye, 200,800 metric tons. Barley, oats, sugar-beets, and corn are other leading crops. Mineral output for May, 1941, was reported as follows (in metric tons): Iron ore, 83,891; sintered iron ores, 6,018; pyrites, 741; manganese ore, 6,346; antimony ore, 1,277; copper ore, 10,443; gold and silver ores, 8,592; crude oil, 2,717; salt, 315, pig iron produced, 3,763. Railways in 1940 extended 1,580 miles. Construction of new connecting lines between main lines "amputated" through territorial cessions to Hungary was under way in 1940 and 1941. The important Neuhof-Oberstuben line, costing 445,000,000 crowns, was opened to traffic Dec. 19, 1940.

Government. The Slovak People's party, led by Josef Tiso, a Roman Catholic priest, adopted fascism of the Nazi variety as its ruling principle and imposed it upon Slovakia when the province obtained regional autonomy within the Czechoslovak republic in November, 1938 (see 1938 YEAR BOOK, p. 201). Following the declaration of independence and the acceptance of German protection, a new constitution making Slovakia an authoritarian "Christian National Republic" was adopted by the one-party parliament on June 21, 1939. The Constitution provided for a parliament of 80 members elected by the people for five years from a one-party list; a President elected by Parliament; and a National Council of 22 members exercising wide executive and legislative powers through its chairman, acting as Premier.

The National Council is composed of 6 representatives appointed by the President, 10 of the Slovak People's party, and 6 of the corporative civil service, labor, and commerce organizations. The Premier has power to summon or dismiss Parliament at his discretion, veto any of its measures, and with the approval of the National Council legislate by decree without ratification by Parliament. President in 1941, Josef Tiso (elected Oct. 26,

1939); Premier, Bela Tuka. The Constitution recognized the Slovak National party (successor to the Slovak People's party) as the sole legal political party. Minority rights and religious liberty were granted to all Slovak citizens. The former national minority parties were given the status of subdivisions of the Slovak National party.

Under the Slovak-German treaty of Mar. 18, 1939, Slovakia agreed to permit German military occupation of its frontier districts along the Polish border, to "organize its own military forces in close collaboration with the German armed force," and to "conduct its policy in close collaboration with the German Government." A German-Slovak military agreement ratified Aug. 18, 1939, placed the Slovak military forces under German command and authorized German military occupation of the entire country (see YEAR BOOK for 1939, p. 182 f.). On Nov. 24, 1940, Slovakia adhered to the German-Italian-Japanese treaty of alliance. For 1941 developments, see *History*.

History. As described in the YEAR BOOK for 1940, efforts by some members of the Slovak Government to prevent complete German domination of the republic by closer collaboration with the Soviet Union ended unsuccessfully when Slovakia on Nov. 24, 1940, formally adhered to the Tripartite Pact of the Axis powers. As a result of this decision, Slovakia during 1941 fell increasingly under German control.

The extreme anti-Jewish laws demanded in Berlin were placed in effect. In March the 88,951 persons classified as Jews were by decree segregated from "Aryans" and forced to live temporarily in ghettos pending eventual forced emigration. In September the Slovak Government ended its resistance to application of the Nuremberg laws in Slovakia and authorized similar legislation. Jewish-Aryan mixed marriages were prohibited, a 20 per cent tax was imposed on Jewish-owned property and a 40 per cent tax on Jews' bank deposits.

This anti-Jewish legislation facilitated the extension of German economic control. Many Germans took over businesses relinquished by Jews. There was a considerable influx of Germans from Berlin and Western Germany seeking refuge from British air bombings. The acute shortage of raw materials and the severance of Slovakia from some prewar markets, reflected in the closing of many factories, forced the country into closer economic and political dependence upon the Reich. On March 29 the Slovak Government signed an agreement with the great Hermann-Goering steel and iron concern, owned by the German Government, under which the Podbrezova Iron & Steel Works in Slovakia were combined with the Hermann-Goering works. Operations were placed under German management and financial control was exercised jointly by the Hermann-Goering firm and the Slovak Government. The agreement was ratified by the Slovak Parliament June 26.

Closer economic collaboration with the Reich was accompanied by the arrest and imprisonment during February and March of many Communist agents sent from Russia and of Slovaks agitating against German control. With the German attack upon the Soviet Union beginning June 22, Berlin announced June 24 that Slovak troops were aiding Germany in the struggle. On June 30 the Slovak Government admitted that Slovak forces were at the front.

Many Slovaks were strongly opposed to participation in the war against Russia. The heavy casualties reportedly suffered by Slovak troops contributed to the unrest that manifested itself during the

second half of the year. During four weeks of July and August more than 800 persons, most of them supporters of the Czechoslovak Government-in-Exile in London, were reported to have been arrested as "Communists." Many Slovak soldiers, sent home from the Russian front to bring in the harvest, deserted with their rifles to join Czech guerrilla forces in the Tatra Mountains. Ignoring this opposition, the Slovak Government on November 25 renewed its adherence to the Anti-Comintern Pact for five years.

The Supreme Court Tribunal of Slovakia in Bratislava on February 20 imposed long prison terms in absentia upon prominent Slovaks who remained loyal to the Czechoslovak Government-in-Exile in London. Ex-Premier Milan Hodza of Czechoslovakia received 18 years, Dr. Stefan Osusky, former Czechoslovak Minister to Paris, life imprisonment, and two other leading publicists 15 and 11 years, respectively, for giving away military secrets and conspiring against the Slovak State. Their fortunes were confiscated. See CZECHOSLOVAKIA under *History*.

Also see FASCISM, GERMANY under *History*; WORLD WAR.

SLUM CLEARANCE. See HOUSING AUTHORITY, U.S.

SMITHSONIAN INSTITUTION. An organization founded in 1846 according to the terms of the will of James Smithson of England, who in 1826 bequeathed his property to the United States of America "to found in Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." The purposes of the Institution are carried out by scientific research, exploration, and publication. It also administers the following bureaus which are supported by Congressional appropriations: The United States National Museum, National Collection of Fine Arts, Bureau of American Ethnology, International Exchange Service, National Zoological Park, and Astrophysical Observatory including the Division of Radiation and Organisms. It also administers the Freer Gallery of Art. The new National Gallery of Art was established as a bureau of the Institution but is administered by the Board of Trustees of the Gallery.

The expendable income of the Institution for 1941, consisting of income from investments, income from miscellaneous sources, and gifts for special objects (excluding income from the Freer endowment) was approximately \$250,000. Its endowment funds (exclusive of the Freer endowment) totaled \$2,209,263. The Institution and the government bureaus under its direction published 78 volumes and pamphlets, of which 125,837 copies were distributed to libraries, educational institutions, and individuals. The secretary is Charles C. Abbot, D.Sc.; the assistant secretary, Alexander Wetmore, Ph.D.

SMUGGLING. See CUSTOMS, BUREAU OF; NARCOTIC DRUGS CONTROL.

SOCIALISM. The year 1941, in all belligerent countries, saw further strides in collectivism and state control such as modern total war makes inevitable. Contrary to popular opinion, these steps were not necessarily toward Socialism, unless the word Socialism is to be made synonymous with a totalitarian or militaristic state capitalism. Nowhere was the progress toward state control of economic processes paralleled by similar progress toward democratic controls of the state, or the economic mechanism it set up.

Great Britain where members of the Labor Party continued to fill very important posts in the National Cabinet was not an exception to this generalization. Indeed, that shrewd Prime Minister, Winston Churchill, arranged that one leader of British Labor, Mr. Ernest Bevin, had to enforce wartime restrictions on labor and conscription of workers; and another, Mr. Herbert Morrison, had to enforce the order under which suspected persons could be interned without right of appeal to the writ of habeas corpus. Nevertheless, in Great Britain, partly as a result of the strength of the Labor Party, and partly because of the excellence of the British tradition, civil liberties were surprisingly well preserved; better preserved than in the First World War, though less well preserved than some enthusiasts have assumed.

The Labor Party at an official conference reaffirmed its support of the government. It again expressed its belief in international economic planning and declared that "no peace which does not aim at a Socialist reconstruction and international society can be accepted by the Labor Party as adequate to the sacrifices involved in the defeat of Nazi and fascist aggression." It set up a central committee on reconstruction, with Emanuel Shinwell, M.P. as Chairman and Harold J. Laski as secretary. On the last day of July the Party again refused to be associated in any way with the Communist Party, on the ground that its policy had "never been determined by democratic methods, nor by references to the needs and purposes of the British people."

Still later, in the fall of 1941, leaders of the Party, supported by the great majority of Labor Party members in Parliament, rejected an amendment to the Conscription Act, introduced with the support of a few Labor members, calling for public ownership and control of industry as "the essential method of obtaining complete utilization of the national resources." Ernest Bevin, opposing the amendment both for the Cabinet and for the majority of the Labor Party, declared that property was already at the government's disposal and promised that questions of further requisition would continue to be judged on their merits.

On this record it would appear that the Party took no aggressive action looking toward democratic socialization at home, or the solution of problems of empire, such as the Indian question, or the specific statement of different war aims than those embodied in the Charter of the Atlantic. Perhaps because of these things, the small Independent Labor Party made some progress in public support. At a Parliamentary bye-election it gained 20 per cent of the vote for its Secretary and candidate, Fenner Brockway. The I.L.P. is pushing socialization and advocates a socialist or workers' peace to be won by the peoples of all countries. It says that it opposes not only the national government but also the government's war. To most observers it would appear, however, that the actual position of the I.L.P. on the war could most realistically be described as one of highly critical support.

In Australia, the Parliamentary crisis, due largely to questions of Australian relations to the war, and the strategy of the British Empire, finally resulted in the formation of a Labor Government with John Curtin as Prime Minister. In New Zealand the Labor Government, presided over by Peter Fraser, continued in office and inaugurated a system of national free medical care. It suffered reverses in the municipal elections in May. In Canada the Cooperative Commonwealth Federation showed strength in British Columbia when it returned 14 members

to Parliament out of a total of 48, as against 7 in the previous provincial election.

Outside of the British Commonwealth of Nations, European Socialists were able to function openly through Socialist or Labor Parties only in Eire, Sweden, Switzerland, and Finland. In Denmark a coalition government, headed by the Socialist Premier Stauning, remained in office, but all real power was usurped by the Nazis. In Sweden Per Albin Hansson's Cabinet, supported by the Social Democrats and agrarians, continued in office. It struggled to keep out of war, while retaining as much as possible of independence and freedom of action, and was concerned for defense against possible invasion. As the year drew to a close, Finnish Socialists who were represented in the Cabinet began to bring increasing pressure on the government to find ways of ending the war with Russia, before the country found itself too completely tied to Germany's fate. The Norwegian Labor Government in exile, with headquarters in London, continued to manage the large and important merchant marine. In general, belligerent governments in exile contained Labor and Socialist members, all of whom were extremely active in the struggle against Nazism.

Leon Blum, and other prominent French Socialists, were held in prison during the year on charges of responsibility for plunging France into war. Many Socialists were executed; more were put in concentration camps. Marx Durmoy, former Socialist Minister of the Interior, was assassinated.

In all the countries occupied by the Nazis, Socialists were active in underground movements, and many, caught by the German Secret Police, suffered the fate meted out by that organization. In Germany itself, Dr. Rudolf Hilferding, former Social Democratic Minister of Finance, was found hanged in a prison cell.

In South America, active Socialist Parties are legal in Argentina, Uruguay, and Chile. In Ecuador the position of the Party may be described as semi-legal. In Peru, the Aprista Party, an indigenous South American Party, radical rather than Socialist, remained strong, although nominally suppressed by the dictator. The Party had influence in other Latin American countries.

In Chile where the radical strength proved greatest, the Socialist Party was an uneasy member of the United Front behind President Pedro Aguirre Cerda. Socialist members of the Cabinet resigned early in 1941 in protest against the inclusion of Communists in the Popular Front, but the President refused to accept their resignations. In the March election in which the Socialist Party ran independently, it elected 15 Deputies and 5 Senators and later agreed on a pact for cooperation with the Radical Party, making possible the continuance of the Popular Front Government. Late in the year, following the death of the President, the Socialists nominated their own leader, Oscar Schnake, for the Presidency, but in fear of a conservative victory at the polls, withdrew him and reunited with the Radicals for the Presidential election early in January, 1942.

In the United States socialists (with a little "s") were divided on the war issue. The Social Democratic Federation continued active advocacy of American participation in war. Pro war socialists took the leadership in forming the Union for Democratic Action in the spring of 1941. This group was interventionist, but stressed the importance of advancing democracy at home and winning a democratic peace.

The official Socialist Party until the Japanese at-

tack on Hawaii Dec. 7, 1941, continued its active opposition to American participation in the war and to the steps which led to war. The Party made it unmistakably clear that it was opposed to all totalitarianism, and especially to Hitlerism as the most aggressive form of totalitarianism, but it urged that this country could better advance democracy and, in the long run, serve mankind by keeping out of war. It repeatedly proposed a program to that end with reference to Japan, which program would also have cut down the supply of war material which, with the approval of the Administration, had been flowing to Japan from America.

After the United States was completely involved in war, the National Executive Committee of the Party directed Socialist thought and action to the preservation of civil liberties; the establishment of democratic controls of war and postwar collectivism; the preservation and improvement of the standard of living for low-income groups—despite the war; and taxation according to ability to pay. It declared for the achievement of a democratic Socialism as the only desirable alternative to a totalitarian form of state capitalism. It sought the earliest possible achievement of an enduring and desirable peace, anti-imperialist in nature, supported by the cooperation of peoples and not by the police power of an Anglo-American military alliance.

The year 1941 was an off year in American political campaigns. The chief exception was the municipal election in New York City, where the Socialist Party broke off its effort to work municipally within the American Labor Party because of the strong interventionism of the latter Party, and its policy of indorsing candidates of the Republican and Democratic Parties. The Socialist Party nominated a City-wide ticket headed by Prof. George Hartmann of Teachers College, Columbia University, which received about 25,000 votes, doubling the very small vote cast for the Party in the Presidential election. Dr. Harry W. Laidler, elected under proportional representation to the New York City Council in 1939 under the American Labor Party banner, with the indorsement of Socialists and other groups, was refused renomination by the American Labor Party. He ran again with the indorsement of the Socialist Party and other civic groups and was defeated. Two members of the Social Democratic Federation, which continued to work politically through the A.L.P. were elected to the Council under the designation of the A.L.P. In Bridgeport, Connecticut, Jasper McLevy, leader of the Connecticut Socialist Party—which had broken with the Socialist Party of the U.S.A. in 1936—was easily reelected Mayor.

In the United States and elsewhere there was talk, but no effective action, concerning the rebuilding of an international Socialist organization. It proved far easier for the Communist Party, controlled from Moscow and dependent on Stalin's will, to switch from vehement anti-interventionism to equally vehement interventionism after Hitler's attack on Stalin than for democratic Socialists to reconstruct an international movement in the midst of war. (See also the several countries mentioned above, under *History*.)

NORMAN THOMAS.

SOCIALIST PARTY. See **SOCIALISM**.

SOCIAL SECURITY BOARD (SSB). The Social Security Board has administrative responsibility for three nation-wide programs, designed to bring greater security to the American people. These are (1) old-

age and survivors insurance—a Federal system which provides monthly benefits for workers when they retire after age 65, for certain members of their families, and for certain surviving members of the families of workers who die; (2) employment security—a twofold program which includes the U.S. Employment Service, a system of nationally operated public employment offices, and State unemployment compensation systems operated by the States with the cooperation of the Federal Government; and (3) public assistance under which the Federal Government cooperates with the States in giving immediate cash aid, on the basis of need, to three groups who are unable to support themselves—the aged, the blind, and dependent children.

Employment Security. During 1941 the Board's Bureau of Employment Security assumed increasingly important responsibilities. The U.S. Employment Service, as the official agency for recruiting workers and trainees for the war industries, and as the chief source of information on labor supply and demand, was assigned a key position in the nation's wartime program. This service maintains 1,500 full-time and 3,000 part-time employment offices throughout the country, operating at no charge to employers or workers. It also maintains a clearance system whereby qualified workers may be referred to jobs in any part of the country where there is a demand for their particular skills.

Early in the year the employment service was given important responsibilities in connection with the vocational defense training program. In addition to recruiting qualified individuals for training and placing the trainees in jobs, the employment service advises the training authorities as to the occupations in which training is to be given and the number to be trained, so as to meet the needs of the war industries more effectively.

As the basis for its labor recruiting activities, the employment service maintains a current inventory of workers in several hundred important defense occupations who are available through the public employment offices. This is supplemented by current information on existing and anticipated demands for labor in the major wartime industries and on changing conditions in the labor market. The U.S. Employment Service provides the War Production Board (formerly OPM; q.v.) with detailed reports on plants and localities affected by labor displacement because of material shortages and curtailment orders. These reports are the basis for remedial action by the WPB and the War and Navy contract authorities. The Employment Service is responsible for registering the displaced workers and transferring them as rapidly as possible to war production industries, arranging for the necessary retraining of those workers who cannot immediately qualify for new jobs.

To coordinate the Government's activities in connection with recruitment and training of labor, the OPM, in the summer of 1941, established 12 Regional Labor Supply Committees throughout the country, similar to the National Labor Supply Committee in Washington. The Director of the U.S. Employment Service is a member of the National Labor Supply Committee and the 12 regional representatives of the employment service were designated to act as chairmen of the Regional Labor Supply Committees. Each committee includes representatives of labor, management, and every Government agency concerned with labor supply and training and has broad responsibility for keeping the war industries adequately supplied with trained manpower.

A major development in the administration of the U.S. Employment Service occurred shortly after the United States entered the war. As originally established, each State operated its own employment service, with financial aid and cooperation from the Federal Government. In order to bring about the increased speed and coordination of action necessary to meet the labor demands of the wartime production program, the President, in December, 1941, transferred the personnel and facilities of the State employment services to the Federal Government and provided that they be federally operated by the U.S. Employment Service of the Social Security Board.

During 1941 the U.S. Employment Service made 7,625,000 job placements, more than double the number in 1940. The result of wartime industrial expansion on employment was also reflected in the other phase of the employment security program—unemployment compensation. Unemployment benefit payments by the 48 States, Alaska, Hawaii, and the District of Columbia, decreased sharply during the year. Benefit payments totaling \$340,000,000 were paid to approximately 3,500,000 workers in 1941, as compared with \$520,000,000 paid to approximately 5,500,000 workers in 1940.

Old-age and Survivors Insurance. Under the old-age and survivors insurance system, payment of monthly benefits began on Jan. 1, 1940. During the year 1941, over \$80,000,000 was certified for payments of monthly benefits and \$13,000,000 was certified for lump-sum death payments. The number of individuals on the benefit rolls by Dec. 31, 1941, was over 425,000 with a monthly benefit rate of nearly \$8,000,000. Of the total number of beneficiaries, almost one-half were aged retired workers, more than one-eighth were wives aged 65 or over, more than one-fourth were children under age 18, nearly one-eighth were widows having children under 18 in their care, the remainder were parents and aged widows of deceased workers, principally the latter. Several times as many workers past 65 as the number on the benefit rolls have had sufficient employment and wages to be entitled to monthly benefits but have not applied for them. Some of those who have been awarded monthly benefits have chosen to keep on working or to return to work in preference to receiving benefits. Probably the unexpectedly large percentage of workers past 65 who continued to work is attributable to the increased employment opportunities created by the defense program.

An estimated total of 40,000,000 employees were engaged in employment covered by old-age and survivors insurance during 1941. About 2,400,000 employers reported wages for their employees under this system during the year. At the end of the year there were 477 social security field offices in central towns and cities throughout the country to serve workers and their employers in all matters pertaining to old-age and survivors insurance.

Public Assistance Program. Under the public assistance programs, the Federal Government shares with the State the cost of financial aid to the needy if the State has a plan which has been approved as meeting the standards established by the Social Security Act. By September, 1938, all States, Alaska, Hawaii, and the District of Columbia, had approved plans for aid to the needy aged. During 1941, four State plans for aid to dependent children were approved, bringing the total number of States receiving grants for this form of aid to the needy to 47 (see CHILDREN'S BUREAU); one State plan for aid to the blind was approved during the year bringing the total to 44.

At the end of the year some 3,214,000 needy men, women, and children were receiving monthly cash payments under these plans, including 2,235,000 aged, 53,000 blind, and 926,000 dependent children in 383,000 families. In 1941, total payments to recipients, from Federal, State, and local funds amounted to \$707,871,000 including \$543,207,000 to the aged, \$150,186,000 to dependent children, and \$14,278,000 to the blind.

By the end of 1940, all States had organized and instituted plans for the selection and promotion of personnel on a merit basis in State employment security and public assistance agencies as provided in the 1939 amendments to the Social Security Act. During 1941, plans for conducting examinations were developed in all States and by the end of the year initial examinations had been held and registers established in practically every State.

(For details concerning operation of old-age and survivors insurance, unemployment compensation, and public assistance, see the 1940 YEAR BOOK.)

For statistics by States see the articles on the States under *Social Security*. For enactments, see LABOR LEGISLATION; the States under *Legislation*.

ARTHUR J. ALTMAYER.

SOCIAL STUDIES. See EDUCATION, LITERATURE under *Sociology*, PHILANTHROPY under *Foundations*.

SOCIETIES AND ASSOCIATIONS The following is a list of some of the leading national and international organizations, with a concise report of their activities during 1941. The organizations are listed alphabetically according to the first specific word in each title. Certain classifications have been omitted in this list because they are presented elsewhere in this volume. The reader is, therefore, referred to the following articles as a supplement: for accrediting associations, to the article on UNIVERSITIES AND COLLEGES, for labor organizations, to LABOR CONDITIONS; for religious bodies, to the table of RELIGIOUS ORGANIZATIONS, as well as to interdenominational groups listed below; for sport organizations, to articles on various sports and *Amateur Athletic Union*, below, for foundations, trusts, etc., to PHILANTHROPY and the articles there referred to. For government agencies, learned academies, and institutes see separate articles.

Actors' Fund of America, founded in 1882 to care for the impoverished, aged, and infirm members of the theatrical profession. Membership (1910) 1,807. President Walter Vincent. Secretary Robert Campbell. Headquarters 1619 Broadway, New York City. The Fund, supported by donations, benefit performances, and a limited endowment, spends from \$140,000 to \$180,000 a year. A Home for retired actors is maintained in Englewood, N. J.

Adult Education, American Association for, founded in 1926 to serve as a clearing house for information, initiate activities, and assist enterprises already in operation, and to aid and advise individuals who, although occupied with some vocation or interest, desire to continue their education. Membership 1,400. President Harry W. Chase. Director, Morse A. Cartwright. Headquarters, 525 West 120 Street, New York City.

Advancement of Colored People, National Association for, founded in 1909 to combat the spirit of persecution which confronts colored people in the United States, safeguard their rights, and secure for them equal opportunity with all other citizens. Membership 100,000. President Arthur B. Spingarn. Executive Secretary, Walter White. Headquarters 69 Fifth Avenue, New York City. The Spingarn Medal for 1941 was awarded to Richard Wright, author, of New York. The 33rd Annual Conference will be held in Los Angeles, Calif., July, 1942. See NEGROES.

Advancement of Music, National Bureau for, founded in 1916 to promote musical interest and activities and to aid those interested in such activities. It has no membership other than the ten members of the Board of Control. President and Managing Director, C. M. Tremaine. Secretary, Osbourne McConathy. Headquarters 45 West 45 Street, New York City. The Bureau cooperates with existing agencies in the field of music and promotes

also National Music Week (beginning first Sunday in May), now expanded to National and Inter-American Music Week, school music contests and festivals, community music, group instruction in applied music, etc.

Advancement of Science, American Association for, founded in 1848, a democratic and representative organization devoted to the whole field of science. Organized in 15 sections, it has over 23,000 members and 184 associated societies. President, Dr. Irving Langmuir. Permanent Secretary, Dr. F. R. Moulton. Headquarters, Smithsonian Institution Building, Washington, D. C. Scheduled meetings, Ann Arbor, Mich., week of June 22, 1942, New York City, week of Dec. 28, 1942, to Jan. 2, 1943. See PSYCHIATRY.

Advancement of Science, British Association for, founded in York, England, in 1831. President, Sir Richard Gregory; Secretary, O. J. R. Howarth. Headquarters, Burlington House, London, W. 1. The Association holds an annual meeting at which papers are read (subsequently published) and sets aside an annual sum for scientific researches. In lieu of the appointed 1941 meeting, a short Conference was arranged, September 26-28, in London, which dealt with Science and World Order. The transactions of this conference, which attracted wide attention, were published in the official journal *The Advancement of Science* (no. 5) in January, 1942. A seven-point charter of scientific principles was adopted at the meeting, by which it was hoped that scientists might make their influence dominant in a better world of the future.

Advertisers, Association of National. See RADIO PROGRAMS.

Aeronautic Association, National, founded in 1922, a non-profit, non-partisan organization representing the public interest in all phases of aviation. Net paid membership over 16,000 with over 100 chapters throughout the United States. President, Gill Robb Wilson. Manager, Kendall K. Hoyt. Headquarters, Willard Hotel, Washington, D. C. Outstanding functions, 1941 Annual Convention and Fourth American Aviation Forum, Louisville, Ky., June 1-4; award of Collier Trophy for 1940 to Dr. Sanford A. Moss of the General Electric Company and to the Army Air Corps for outstanding success in high altitude flying by the development of the turbo-supercharger.

Alcoholism, World League against, founded in 1919 to attain by means of education the total suppression of alcoholism throughout the world. Membership 51 national temperance organizations in 31 countries. Executive Secretary, Ernest H. Cherrington. Headquarters, Westerville, Ohio. During 1941 the League continued to supply factual and source material to temperance organizations in practically every country, to publishers of temperance periodicals, and to schools. It maintains at Westerville, Ohio, a large reference library on the subject of alcohol.

Amateur Athletic Union of the United States (A.A.U.), founded in 1888 to improve and promote amateur sports and the civic interest of the Nation, by the education of all classes in the benefits to be derived by participation in athletics. The A. A. U. establishes a uniform test of amateur standing and uniform rules governing the sports within its jurisdiction, regulates and awards the athletic championship of the United States, and promotes legislation in the interest of sports facilities. President, L. di Benedetto. Secretary, D. J. Ferris. Headquarters, 233 Broadway, New York, N. Y. For activities and awards during 1941, see the separate articles on the various sports.

America First Committee. See FASCISM; UNITED STATES under *Foreign Affairs and Unity*.

American Legion. See separate article.

American-Scandinavian Foundation, listed under *Scandinavian*.

Anglo-American Food Committee. See PUBLIC HEALTH SERVICE.

Antiquarian Society, American, founded in 1812 with the maintenance of a national library of American history as its chief purpose. The library contains nearly 700,000 titles and is free for the use of all qualified scholars. Membership 200. President, Samuel Eliot Morison. Director, C. S. Brigham. Headquarters, Worcester, Mass.

Anti-Saloon League of America, founded in 1895 to promote temperance education and legislation; a non-membership organization. President, Bishop Ralph S. Cushman. General Secretary, George W. Crabbe. Headquarters, 131 B Street, S. E., Washington, D. C.

Applied Psychology, American Association for, founded in 1937 to promote the service which psychology as a science can render society in its application in business, education, industry, law, medicine, mental hygiene, social welfare, and related fields. Membership 680. President, Walter V. Bingham. Executive Secretary, C. M. Louttit. Indiana University, Bloomington, Ind. During 1941 the Association published, in addition to *The Journal of Applied Psychology*, the first biographical directory of applied psychologists. Scheduled meeting, Harvard University, September, 1942.

Archaeological Institute of America, founded in 1879 to promote and direct archaeological investigation and research. Membership, 1,450. President, William Bell Dinsmoor. General Secretary, Meriwether Stuart. Headquarters, 504 Schermerhorn Hall, Columbia University.

Architects, The American Institute of, founded in 1857

to promote the efficiency of the profession, to advance education in architecture and allied subjects, and to make the profession of increasing service to society. Membership: 8,091. President: R. H. Shreve. Secretary: Charles T. Ingham. Headquarters: The Octagon, 1741 New York Avenue, N.W., Washington, D.C. The 74th Annual Convention will be held in Detroit, Mich., June, 1942.

Artists Professional League, Inc., American, founded in 1928 to arouse for American art the regard, preference, and support of the American people; to spread dependable technical knowledge among artists, and to obtain legislation that will benefit the artist's profession and terminate piracy of designs. Membership: about 2,000. Chairman: F. Ballard Williams. Secretary: Wilford S. Conrow. Headquarters: Carnegie Hall, New York City. The American Art Week awards in 1940 were made to the following State Chapters: Massachusetts, Maine, New Jersey, Oklahoma, Oregon, and Nebraska. The 1942 annual meeting was scheduled for February.

Arts, The American Federation of, founded in 1909 to develop art and its appreciation. Chapter Membership: 510. Honorary President: Hon. Robert Woods Bliss. Acting President: George Hewitt Myers. Director: Thomas C. Parker. Headquarters: Barr Building, Washington, D.C. The 1942 Annual Convention and Meeting will be held in Washington, D.C. in May.

Arts and Letters, National Institute of, founded in 1898 to further the interests of literature and the fine arts. Membership: 250. President: Arthur Train. Secretary: Henry S. Canby. Headquarters: 638 West 155 Street, New York City. A Gold Medal was awarded in 1941 to Robert Sherwood for drama. Scheduled meetings: Festival to be given jointly with the American Academy of Arts and Letters in May, 1942, at New York City; Annual Dinner-Meeting, Dec. 16, 1942, in New York City.

Arts and Sciences, American Academy of, founded in 1780 to encourage scientific work and publication. Membership: 791 Fellows and 126 Foreign Honorary Members. President: Harlow Shapley. Corresponding Secretary: Abbott Payson Usher. Headquarters: 29 Newbury Street, Boston, Mass. During 1941 a number of grants for research work were made from funds given the Academy for that purpose. The Amory Septennial Prize was awarded for the first time, and the Rumford Medals for the fortieth Meetings are held monthly, October through May.

Asiatic Association, American, founded in 1898 to study relations between Asiatic countries and the United States. Membership: 200. President: Howard E. Cole. Secretary: John B. Chevalier. Headquarters: India House, Hanover Square, New York City. Annual meetings are held the third Thursday in October at the India House.

Astronomical Society, Royal. See ASTRONOMY.

Audubon Society, National, founded in 1905 for the protection of wild birds and mammals. Membership: 160 affiliated clubs and 6,500 individuals. President: Guy Emerson. Executive Director: John H. Baker. Headquarters: 1006 Fifth Avenue, New York City. Activities during 1941 included enrollment of 200,000 children throughout the country in Audubon Junior Clubs in schools, camps, and youth organizations; training of 264 adult teachers and leaders at the Audubon Nature Camp; conduct of Audubon Wildlife tours in South Carolina, Florida, Texas, and California. Protective warden service provided for wildlife sanctuary areas in New Jersey, Virginia, South Carolina, Florida, Louisiana, and Texas. Research projects were conducted in connection with Roseate Spoonbill, Florida Deer, California Condor.

Automobile Association, American (A.A.A.), founded in 1902 to provide a national network of service and protection for motor-club members and to work for the improvement of motoring conditions. Membership in A.A.A. Clubs: about 1,021,000. President: Thos. P. Henry. General Manager: Russell E. Singer. Headquarters: 17th Street and Pennsylvania Avenue, N.W., Washington, D.C. A nationwide Pedestrian Protection Contest held in 1941 was participated in by all States and hundreds of cities; the first State prize went to Oklahoma and first prize for large cities to Cleveland, Ohio. With the outbreak of war a number of new services were instituted by A.A.A. clubs to aid the war effort and to help maintain automotive transportation. These activities included establishment of Service Motor Leagues to give rides to men in uniform, training courses for volunteers for Civilian Defense drivers' corps, and extensive conservation programs designed to obtain maximum mileage from automobiles and tires.

Automobile Manufacturers Association, founded in 1918 for service to the motor industry. Membership: 29. President: Alvan Macauley. Secretary: Byron O. Foy. Headquarters: New Center Building, Detroit, Mich. The Association conducts annually the National Automobile Show at New York. See MOTOR VEHICLES.

Automotive Council for War Production. See MOTOR VEHICLES.

Bacteriologists, Society of American, founded in 1899 to promote the science of bacteriology and bring together American bacteriologists for demonstration and discussion of methods and consideration of subjects of common interest. Membership: about 1,600. President: Dr. O. T. Avery. Secretary: Dr. I. L. Baldwin. Headquarters: Uni-

versity of Wisconsin, Madison, Wis. The 1942 meeting will be held in Columbus, Ohio, December 28-30.

Bankers Association, American, founded in 1875 to promote the welfare and usefulness of banks, secure uniformity of action on subjects of importance and provide opportunity for discussion thereon, and to provide educational opportunities for bank officers and employees. Membership: 14,214. President: H. W. Koeneke. Headquarters: 22 East 40 Street, New York City. Four new departments were established in 1940—Consumer Credit, Research in Mortgage and Real Estate Finance, Economics, and Customer Relations. Scheduled meetings: Regional, Mar. 4-6, 1942, in New York City; Trust, February 8-5, New York City; Annual Convention, October, Detroit, Mich. See BANKS AND BANKING.

Banking, American Institute of, founded in 1900 to further the education of bankers in the theory and practice of banking and such principles of law and economics as pertain to the banking business, and to establish and maintain a recognized standard of banking education by means of official examinations and issuance of certificates of graduation. Membership about 70,000. President: George T. Newell. Headquarters: 22 East 40 Street, New York City. The 1942 annual convention will be held in New Orleans, La., June 8-12.

Banks, National Association of Mutual Savings, listed under Mutual.

Bar Association, American, founded in 1878 to advance the science of jurisprudence, promote the administration of justice and uniformity of legislation and judicial decision, uphold the honor of the profession, encourage cordial intercourse among members of the Bar, and correlate activities of State Bar Associations. Membership: 80,884. President: Walter P. Armstrong. Executive Secretary: Olive G. Ricker. Headquarters: 1140 North Dearborn Street, Chicago, Ill. In 1941 the Award of Merit was given to the Colorado Bar Association, The Bar Association of St. Louis, and the Nueces County Bar Association of Corpus Christi, Texas. The American Bar Association Medal was awarded to George Wharton Pepper of Philadelphia, Penn., and the Ross Essay Prize to Willard Bunce Cowles of Washington, D.C. Scheduled meetings: House of Delegates, Mar. 2-3, 1942, Chicago; Annual, Aug. 24, 1942, Detroit.

Better Business Bureaus, Inc., National Association of, founded in 1918 to encourage the formation of and assist in the development of Better Business Bureaus engaged in fostering truth in advertising and opposing fraud and/or unethical practices in advertising and selling. Membership: 74 associations. President: R. J. Bauer. Secretary: Hugh Smith, Philadelphia.

Bible Society, American, founded in 1816 to encourage wider circulation of the Holy Scriptures without note or comment throughout the world. Membership probably over 15,000. President: John T. Manson. General Secretaries: Dr. Eric M. North, Dr. F. W. Cropp. Treasurer: Rev. Gilbert Darlington. Headquarters: Park Avenue and 57th Street, New York City. Universal Bible Sunday was observed Dec. 14, 1941. The 1942 annual meeting will be held May 14.

Bibliographical Society of America, founded in 1904 to promote bibliographical research and issue publications. Membership: 850. President: Thomas W. Streeter. Permanent Secretary: George L. McKay, 47 East 60 Street, New York City.

Birth Control Federation of America, Inc., founded in 1939 by the American Birth Control League (1921) and the Birth Control Clinical Research Bureau (1923) to foster planned parenthood by making birth control information available. Membership about 84,000. Margaret Sanger is Honorary Chairman. President: Dr. Richard N. Pierson. Secretary: Mrs. Albert D. Lasker. Headquarters: 501 Madison Avenue, New York City. The 1942 annual meeting is scheduled, Jan. 28-30, in New York City. See BIRTH CONTROL.

Bishops' Relief Committee. See ROMAN CATHOLIC CHURCH.

Blind, Inc., American Foundation for the, founded in 1921 to promote those interests of the blind which cannot be advantageously handled by local agencies. President: M. C. Migel. Executive Director: Robert B. Irwin. Headquarters: 15 West 16 Street, New York City. Activities include research, assistance and consultation service to local agencies, special services to individuals, scholarships, a reference and lending library, and manufacture of Talking Books for the blind.

Blindness, National Society for the Prevention of, listed under Prevention.

B'nai B'rith (Sons of the Covenant), a Jewish service and fraternal organization, created in 1843 to further the unity of the Jewish people and to serve humanitarian causes through a program that encompasses Americanism, youth welfare, education, community and social service, good will, defense of Jewish rights, and, now, activities in National defense. Membership: 125,000. President: Henry Monsky. Secretary: Maurice Bigsger. Headquarters: 1003 K Street, N.W., Washington, D.C. Cooperating with the National defense program in 1941 B'nai B'rith actively aided government and quasi-public agencies, such as the Office of Civilian Defense, American Red Cross, United

Service Organizations: made available its manpower and machinery to bolster civilian morale, sponsored drives for the sale of defense bonds; contributed to programs providing recreational and spiritual needs of men in the armed services. It expended well over \$150,000 in providing aid to needy Jews abroad, and in great public emergencies at home and abroad. Nearly 1,000,000 people of all races and creeds attended B'nai B'rith patriotic rallies, and impetus was added to Americanism activities through the creation of a National Americanism commission. The next triennial convention is to be held in the spring of 1944.

Board of Review of Motion Pictures, Inc., National, listed under *Review*

Botanical Society of America, Inc., established in 1906 as a clearing house for the botanists of America. It supports projects of general interest to botanists, provides an opportunity for the presentation and publication of research studies, and accepts and administers funds for certain purposes. The official publication is *The American Journal of Botany*. Membership: 1,865. President J. T. Buchholz. Secretary, Paul R. Burkholder, Osborn Botanical Laboratory, Yale University, New Haven, Conn. The Society will meet in New York City in December, 1942.

Boys Clubs of America, Inc., organized nationally in 1906 by existing Boys' Clubs to promote their development and improvement. Membership 352 member organizations reaching over 300,000 boys. President William Edwin Hall. Chairman Herbert Hoover. Secretary William Ziegler, Jr. Headquarters 381 Fourth Avenue, New York City. During 1941 16 new Boys' Clubs were organized, 19 buildings erected, and improvement made in programs and service.

Boy Scouts of America, founded in 1910 to promote the ability of boys to do things for themselves and others, to train them in Scoutercraft, and to teach them patriotism, courage, self-reliance, and kindred virtues. Membership, 2,162,570. President, Walter W. Head. Chief Scout Executive, James E. West. Headquarters 2 Park Avenue, New York City. The Program for Strengthening and Invigorating Democracy, organized and launched in 1940, was further emphasized during 1941 and Scouts took active part in the Defense Program of our Government. Troops took inventory of membership, equipment and training on a nation-wide scale in order to be in a position to measure their readiness to serve the Government. Scouts took part in many activities in relation to the unlimited emergency in the National Defense Program, among which were the distribution of official Government posters, the collection of aluminum and the collection and salvage of waste paper material; all three undertaken at the special request of the Government. On Saturday, June 21, 3,500 Scouts took part in the unveiling of the William D. Boyce Memorial, a life-size statue of the McKenize Boy Scout Statuette of the Unknown Scout who motivated William D. Boyce to bring the Scout idea to America in 1910. The Thirty-First National Council Meeting of the Boy Scouts of America was held at the Willard Hotel, Washington, D. C. May 16-17, 1941. Five thousand Boy Scouts made their 22nd Annual Pilgrimage to the Grave of Theodore Roosevelt on Oct. 18, 1941 at Oyster Bay, L. I.

British War Relief Society, Inc., founded in 1939 to provide comforts for the British troops, now the largest American organization operating for the sole cause of civilian war relief in Britain. It represents an amalgamation of the Society and the Allied Relief Fund, and as such has raised, since inception, nearly \$15,000,000 in cash and in kind at a cost of under seven cents on the dollar, made possible through the efforts of volunteers all over the country organized in nearly 900 committees. The Society has provided for British relief such aids as thousands of lbs of winter clothing, hundreds of mobile Feeding Kitchens, air raid relief equipment, ambulances, surgical units, hospital care, and so forth. Overhead expense has totaled about 9.4 per cent of the cash contributions received and 6.97 per cent of contributions of all kinds. Chairman Samuel Salvage. President Winthrop W. Aldrich. Secretary George R. McGee, Jr. Headquarters 730 Fifth Avenue, New York City.

Broadcasters, National Association of, founded in 1922 to promote and defend the American system of privately owned, competitively operated radio and to render every aid to those engaged in it to enable them to operate in the public interest. Membership 510. President Neville Miller. Assistant to the President: O. E. Arney, Jr. Headquarters: Normandy Building, 1626 K Street, N.W., Washington, D. C.

Broadcast Music, Inc. (B.M.I.), founded in 1940 to provide a new source of music supply to the broadcasting industry. Membership corporation owned by 743 radio stations. President Neville Miller. Executive Vice President Sydney M. Kaye. Vice President, General Manager, Merritt E. Tompkins. Headquarters 580 Fifth Avenue, New York City. During 1941 B.M.I. supplanted ASCAP music on the air for ten months, licensed music to Canada, Australia, England, and South America as well as in the United States, and for the first five months produced more music than all other music houses combined.

Bund, German-American. See *FASCISM*.

Bundles for Britain, Inc., founded in January, 1940,

to supply aid and relief to the citizens of Britain and the British Empire. Membership about 1,000,000. President: Mrs. Wales Latham. Secretary: Mrs. Robert Worth Bingham. Headquarters 475 Fifth Avenue, New York City. The outstanding activity of 1941 was the Christmas campaign held in New York City for Britain's children, December 1-13. Various other entertainments were held elsewhere during the year.

Business and Professional Women's Clubs, Inc., The National Federation of, founded in 1919 to bring about a spirit of cooperation among business and professional women of the United States and to extend opportunities to them through education along the lines of industrial, scientific, and vocational activity. The Federation adopted the following objective in 1941: "We seek to vitalize the processes of democracy that all people may enjoy the basic satisfactions of life in a world at peace." Membership 76,000. President Dr. Minnie L. Maffett. Executive Secretary Louise Franklin Bache. Headquarters: 1819 Broadway, New York City. During 1941 the Federation's program theme was "Strengthen Democracy for Defense." This program outlined cooperative work by the clubs in their communities in such defense activities as vocational training, individual and community health, participation in the work of defense councils and citizens' committees, and stressed particularly the importance of truly democratic procedures both in clubs and communities. The Federation published "Defense on Main Street" in cooperation with the Council for Democracy. It inaugurated a Master File of members as a tool to be used in the defense and post-defense periods. The next biennial convention will be held in New York City, July 11-16, 1943.

Camp Fire Girls, Inc., founded in 1912 to provide an opportunity for girls' personal development, through group experience, leisure-time activities, and cultivation of skills. Membership 307,000. President Mrs. Elbert Williams. Secretary and National Executive Mr. Lester F. Scott. Headquarters, 88 Lexington Avenue, New York City. During 1941 the project "Treasure Trails" found Camp Fire Girls exploring America's cultural heritage. They studied the music, dance, poetry and paintings of other countries, and traced the influence of these contributions in America. They gained appreciation of the arts by visiting museums, attending concerts, and keeping "Treasure" scrapbooks, and through their study were stimulated to make creative contributions in one or more of the Fine Arts. The older girls made a survey of the influence of the movies, radio and magazines, polling the entertainment tastes of young people and making valuable recommendations to interested authorities based on the results of their study.

Cancer, Inc., The American Society for the Control of, listed under *Control*.

Cancer Institute, National. See *PUBLIC HEALTH SERVICE*.

Care of European Children, Inc., U.S. Committee for the, organized July 1, 1940, to coordinate the resources available in the United States for the care of child victims of the war in Europe, the program including the collection of funds, finding homes, placing children, and providing for their proper care. Honorary President Mrs. Franklin D. Roosevelt; President: Marshall Field. Executive Director: Robert Lang. Secretary: Miss Agnes King Inglis. Headquarters 215 Fourth Avenue, New York City. See *CHILDREN'S BUREAU*.

Catholic Welfare Conference, National. See *ROMAN CATHOLIC CHURCH*.

Chamber of Commerce, International, founded in 1920 to provide business men and organizations with a continuing mechanism for interchange of information, joint study, consultation, and periodical conference. Membership. National Committees in 32 countries and affiliated organizations in 18. President: J. Sigfrid Edstrom of Sweden. Chairman of the American Section Eliot Wadsworth; Manager, Chauncey D. Snow. Headquarters (until November, 1939): 38 Cours Albert Premier, Paris, France, (during wartime) 9, Vastra Tradgardsgatan, Stockholm, Sweden. Offices of the American Section. 1615 H Street, N.W., Washington, D. C.

Chamber of Commerce, United States Junior. An organization founded in 1920 to organize young men between 21 and 35 for civic service and community building activities. Membership 125,000. President: Walter W. Finks. Executive Vice President, Douglas H. Timmerman. Headquarters: Merchandise Mart Building, Chicago, Ill. Americanism week is observed February 12-22 annually. Prizes and trophies valued at about \$8,000 were awarded in 1941 for committee activities and excellence of operation, and local and National Distinguished Service Awards were made to outstanding young men. The 1942 annual convention will be held in Dallas, Tex., June 17-20.

Chamber of Commerce of the United States, established in 1913 primarily as a vehicle for the expression of national business opinion on important economic questions. Membership: 1,673 chambers of commerce and trade associations, 6,709 individuals, and 3,672 associates. President: Albert W. Hawkes. Secretary: Ralph Bradford. Headquarters: 1615 H Street, N.W., Washington, D. C. The Chamber is centering its attention mainly upon

defense problems, holding many regional conferences of business readers in all parts of the country to discuss the place of industries in the national defense effort. Chamber spokesmen appear before congressional committees to present a practical business viewpoint on pending legislation. Twelve service departments are maintained covering the main divisions of business activity. Publications include the *Nation's Business*, a monthly, the *Washington Review*, bimonthly, special legislative bulletins, and committee reports. The 30th Annual Meeting will be held in Washington, D. C., Apr. 27-30, 1942.

Chautauqua Institution, founded in 1874 for religious and educational purposes. President Arthur E. Bestor. Secretary Charles E. Pierce. Headquarters Chautauqua, N. Y. A program of music, lectures, and religious services is conducted during July and August each year.

Chemical Society, American, founded in 1876 to advance chemistry, chemical research and knowledge, and the qualifications and usefulness of chemists, incorporated under Act of Congress, 1938. Membership 28,763. President Harry N. Holmes. Secretary Charles L. Parsons. Headquarters 1155 Sixteenth Street, N. W., Washington, D. C. In 1941 the Priestley medal was presented to Thomas Midgley, Jr., the Award in Pure Chemistry to Karl August Folkers, the Eli Lilly and Company Award to David Rittenberg, and the Borden Award in the chemistry of milk to Claude S. Hudson. Two general meetings were conducted during the year at which a successful Employment Clearing House brought together employers and employees. The Society's publications were increased in size and four local sections were established. See CHEMISTRY.

Child Labor Committee, National, founded in 1904 to promote legislation dealing with child labor and related subjects, conduct investigations, advise on administration, and maintain an information service. Membership about 15,000. General Secretary Courtenay Dinwiddie. Headquarters 419 Fourth Avenue, New York City. Activities in 1941 included an investigation of the absence from school of children for work in cotton-growing areas, participation in hearings on Federal bills affecting child labor and related subjects, activities in connection with State child labor legislation. Six new publications and a three-dimensional map on migrants were prepared during the year.

China Society of America, The, founded in 1913 to promote friendly relations and a better understanding between the peoples of the United States and China. Membership 300. President William M. Chadbourne. Secretary Florence Broesler. Headquarters 570 Lexington Avenue, New York City. In addition to distributing information on China to schools and clubs and publishing *China* magazine, the Society held dinners in 1941 in honor of Dr. T. V. Soong and Dr. Quo Tai chi and published a revised edition of the *Syllabus of the History of Chinese Civilization and Culture*.

Christian Endeavor, International Society of, formed in 1885 to further the training of young people in the Christian life, among societies and unions in about 50 evangelical denominations in the United States and Canada. Membership approximately 2,000,000. President Dr. Daniel A. Poling. Executive Secretary Carroll M. Wright. Headquarters 41 Mt. Vernon Street, Boston, Mass. The next convention will be held in 1943.

Christian Front. See UNITED STATES under *Unity*.

Christians and Jews, National Conference of, founded in 1928 to moderate and finally eliminate a system of prejudices which disfigures business, social, and political relations. Membership 21,000. Co-Chairmen: Arthur H. Compton, Carlton J. H. Hayes, Roger W. Straus. President: Everett R. Clunchy. Headquarters 381 Fourth Avenue, New York City. Conferences of Protestants, Catholics, and Jews will be held locally and regionally throughout 1942.

Churches, The World Council of, established as a provisional committee after the world conferences at Oxford and Edinburgh in 1937 to unite the churches of the world on the Federal principle for cooperative service and the promotion of Christian unity. Membership 75 denominations. World Chairman The Archbishop of York. General Secretaries Dr. W. A. Visser 't Hooft, Geneva, Dr. William Paton, London, Secretary in America, Dr. Henry Smith Leiper, New York. Headquarters 297 Fourth Avenue, New York City. 41, Avenue de Champ, Geneva, Switzerland. The American Section meets in New York City in May and October.

Citizens Emergency Committee on Nondefense Expenditures, Inc., organized in July, 1941, to support, in recognition of the need for all-out defense, sound recommendations for economies in nondefense expenditures on a nonpartisan, nonpolitical basis. Chairman, Dr. Henry M. Wriston. Secretary Dr. Guy E. Snavely. Headquarters 1155 Sixteenth Street, N. W., Washington, D. C.

City Managers' Association, The International, founded in 1914 to aid in the improvement of local government administration and the proficiency of city managers. Membership: 657. President: Roy S. Braden. Headquarters 1313 East 60 Street, Chicago, Ill. Publications issued in 1941 included *The Municipal Year Book, 1941*, by Ridley and Nolting. The Institute for Training in Municipal Administration made available a new correspondence course.

Local Planning Administration, which completed the series of ten courses in municipal administration. See MUNICIPAL GOVERNMENT; SEWERAGE.

Civil Engineers, American Society of, founded in 1852 to advance engineering and architectural knowledge and practice, to maintain high standards and encourage intercourse in the profession. There are 64 local sections and 121 affiliated student chapters. Membership, 17,353. President, Ernest B. Black. Secretary George T. Seabury. Headquarters Engineering Societies Building, 33 West 39 Street, New York City. The Norman Medal was awarded in 1941 to Shortridge Hardesty and Harold E. Wessman, the Croes Medal to Edward J. Butler, Quentin B. Graves, and Franklin F. Snyder, the Rowland Prize to John D. Galloway, the Laurie Prize to A. M. Rawns, A. Perry Banta, and Richard Pomeroy, the Colingwood Prize for Juniors to Kenneth D. Nichols, the Construction Engineering Prize to Russel G. Cone, the Daniel W. Mead Prize for Juniors to Allen Jones, Jr., the Daniel W. Mead Prize for Students to Harry A. Balmer, and the Hering Medal of the Sanitary Engineering Division to Joseph W. Ellms. The 1942 Annual Meeting was scheduled January 21-23 in New York City, other meetings at New Orleans in April, Spokane in July, and Atlanta in October, 1942.

Civilian Technical Corps, founded in June, 1941, as a non-military, non-combatant body of paid volunteer civilian craftsmen, established by the British Government to maintain technical equipment used by British forces and their allies. The Corps is a uniformed civilian organization. United States citizens may join without loss of citizenship. Americans joining the Corps were drafted, given free board and lodgings, clothing, and medical care, and were paid salaries ranging from \$24.12 per week to \$38.65. Headquarters 25 Broadway, New York City.

Civil Liberties Union, American, founded in 1920 to maintain the Bill of Rights for everybody, without exception. Membership, 5,626. Chairman of the National Committee Edward A. Ross. Chairman of the Board of Directors Rev. John Haynes Holmes. Director Roger N. Baldwin. Headquarters 170 Fifth Avenue, New York City. The Union continued during the year 1941 its practice of publicly condemning or commending proposed legislation or court decisions affecting democratic rights. Publications included the yearly *Story of Civil Liberty*, the *Civil Liberties Quarterly*, and a running index of all relevant magazine articles.

Civil Service Reform League, National, founded in 1881 to improve and extend the merit system in the public service. Membership 3,000. President Samuel H. Ordway, Jr.; Executive Secretary H. Eliot Kaplan. Headquarters 67 West 44 Street, New York City. In 1941 a Committee on Labor Relations was organized to study the problem of governmental labor relations and unionization of public employees. The League's field program was extended through organization of State committees and correspondents throughout the country. During the year the League was active in behalf of the inclusion of national defense positions under civil service rules and adoption of civil service laws in numerous States and cities.

Civitan International, founded in 1918 for the building of good citizenship, curbing of crime, and diminution of tuberculosis and venereal diseases. Membership about 10,000. President Herbert Z. Hopkins. Secretary Arthur Cundy. Headquarters 800 Farley Building, Birmingham, Ala. For the fiscal year 1941-42 the organization reported the largest gain since its inception. Primary objective conduct of Citizenship Essay Contests in public high schools throughout the country, participated in by some 5,000 students, \$500 in prizes being awarded. Next International Convention will be held in St. Petersburg, Fla., June 30-July 3, 1942.

Classical League, American, formed in 1919 as a national organization for teachers of classics. Membership 4,600. President, B. L. Ullman. Secretary-Treasurer Rollin H. Tanner, New York University, New York City. The organization publishes *The Classical Outlook* and maintains a Service Bureau. It will meet (with the National Education Association) at San Francisco, Feb. 23, 1942, and at Denver, June 29, 30-July 1, 1942.

Colored People, National Association for the Advancement of, listed under *Advancement*.

Composers and Conductors, The National Association for American, founded in 1933 by the late Henry Hadley to advance the interest of the American composer, especially in relation to orchestral conductors, and to secure a hearing for serious works of merit. Membership over 500. President Sigmund Spaeth. Headquarters The Henry Hadley Studio, 15 West 67th Street, New York City. In addition to regular meetings and concerts, the Association sponsored in 1941 All-American programs at Carnegie Chamber Music Hall, Carnegie Hall, the MacDowell Club and elsewhere. Broadcasts were given every beginning in October, and the materials of these programs were distributed to over 300 local radio stations all over the United States. Local chapters of the Association were formed in Los Angeles (with Charles Wakefield Cadman as chairman) and Naomi Reynolds as secre-

tary), San Francisco (led by Frederick Preston Search), San Diego (Radie Britain) and elsewhere. Meetings were held in connection with the national conventions of related organizations, such as the National Federation of Music Clubs, whose prize-winning compositions of the year were given New York performances, as in the past. Cooperation was also given to the concerts of the National Orchestral Association, presenting prize-winning American works, played by prize-winning American artists. The Henry Hadley Medal, for outstanding service to American music during 1940-41, was awarded to Sigmund Spaeth. Certificates of merit were awarded to Paul Creston, Morton Gould, Frances Densmore, C. G. Capell, Joseph Barone, John Charles Thomas, Edwin McArthur, and Mrs. Vincent Hilles Ober.

Composers, Authors and Publishers, American Society of (ASCAP), founded in 1914 to afford American creators of music a cooperative movement to protect performing rights under music copyrights from unauthorized commercialization. Membership, 1,269 composers and authors (172 deceased) and 153 publishers. President Gene Buck, Administrative chairman, E. O. Mills (General manager), John C. Paine. Headquarters, 30 Rockefeller Plaza, New York City. ASCAP continued its now familiar annual Nathan Burkan Memorial Competition, awarding \$100 to each graduate in law in leading schools throughout the country for the best essay on copyright law. ASCAP members have received virtually no revenue from foreign affiliates since the outbreak of the war. See **MUSIC**.

Composers, Inc., The League of, founded in 1923 to further the works by living composers of all nationalities, as well as to help composers by commissions for new works and general promotion of their compositions. Executive Chairman, Mrs. Arthur M. Reis. Headquarters, 113 West 57 Street, New York City. The League publishes a quarterly, *Modern Music*, and conducts a program series in New York and over the air.

Consumer-Retailer Council, Inc., National, founded in 1937 to enable consumers and retailers to work out together their mutual problems. Membership: American Association of University Women, American Home Economics Association, General Federation of Women's Clubs, American Retail Federation, National Association of Food Chains, National Retail Dry Goods Association, National Shoe Retailers Association, National Better Business Bureau, Inc. Chairman, H. W. Brightman. Executive Secretary, Roger Wolcott. Headquarters, 8 West 40 Street, New York City. Accomplishments of 1941 included launching a "Six Point Consumer-Business Program in a Defense Economy." This program, which was geared to the problems created by national defense, was carried out cooperatively by consumer and business groups. Publications of the year included *Informative Labeling, Informative Selling, Food Labels Approved by the National Consumer-Retailer Council, Textile Labels Approved by the National Consumer-Retailer Council*, and *Standard Sizes for Children's Garments*, a booklet published in collaboration with the U. S. Bureau of Home Economics. As part of its program to promote informative labeling, the Council during 1941 approved, as to the type of information they provide, approximately 250 labels in the canned food and textile fields. Labels which have been approved carry the legend "This is the type of label suggested by the National Consumer-Retailer Council." The annual dinner meeting, held Dec. 2, 1941, and devoted to "Textiles in a Defense Economy," was attended by 1,200 representatives of consumer groups and retail, manufacturing, and trade associations. See **CONSUMERS' COOPERATIVES**.

Consumers League, National, founded in 1899 to awaken consumer responsibility for conditions under which goods are made and distributed, and through investigation, education, and legislation to promote fair labor standards. Membership, 15,000, including State and National Leagues. President, Josephine Roche. Chairman of the Board of Directors, John Howland Lathrop. Headquarters, 114 East 82 Street, New York City. See **CONSUMERS' COOPERATIVES**.

Consumers' Research, Inc., founded as the Consumers' Club in 1927 and incorporated in 1929 to provide unbiased information and counsel on goods bought by the ultimate consumer. Number of subscribers, 60,000. President and Technical Director, F. J. Schlank. Secretary, Clark C. Williver. Headquarters, Washington, N. J. The *Annual Cumulative Bulletin*, issued in September, 1941, listed over 4,000 products by brand name as *Recommended, Intermediate, and Not Recommended*, and included basic reference data on consumer problems. An analysis of 1941 automobiles was issued in February, 1941. See **CONSUMERS' COOPERATIVES**.

Contemporary Music, International Society for. See **MUSIC**.

Contractors of America, Inc., The Associated General, listed under **General**.

Control of Cancer, Inc., The American Society for the, founded in 1913 to collect and disseminate information on all aspects of the cancer problem. Its chief purpose is to save lives through education. The Society is authorized to cooperate with recognized medical agencies to help improve treatment facilities. The Society does not treat

patients, nor administer hospitals, clinics, or laboratories. Membership, 600. President, Dr. John J. Morton, Jr. Secretary, Dr. Frank E. Adair. Headquarters, 350 Madison Avenue, New York City. The lay educational program is directed by the Women's Field Army with over 225,000 members. During 1941 more than 1,000 radio programs and announcements on cancer were broadcast; 3,000,000 leaflets were distributed and over 10,000 lectures delivered. Exhibits on cancer were seen by more than 500,000 people throughout the United States and it is estimated that a total audience of 9,000,000 have seen the Society's motion picture "Choose To Live" produced in cooperation with the U. S. Public Health Service. The 1942 annual meeting of the American Society for the Control of Cancer is scheduled for March 7 in New York City.

Cooperative Analysis of Broadcasting. See **RADIO PROGRAMS**.

Cooperative League of the USA, The, founded in 1916 as a national educational federation of consumer cooperatives devoted to the extension of the consumer of cooperative owned business enterprises. Membership, 1,250,000 in 21 affiliated regional associations. President, Murray D. Lincoln. General Secretary, E. R. Bowen. Headquarters, 608 South Dearborn, Chicago, 726 Jackson Place, N.W., Washington, D. C.; 167 West 12 Street, New York City. The highlight of the League's activities in 1941 was the launching of the first Nationwide Co-op Drive in October, a year-long drive with the dual purpose of strengthening the existing cooperatives internally, and to awaken America to the advantages of consumer cooperation. The 14th Biennial Congress, which will close the Co-op Drive, will be held in October, 1942. See **CONSUMERS' COOPERATIVES**.

Cooperatives. See also under *Farmers' Educational and Cooperative Union*; the articles on **AGRICULTURAL COOPERATION**, **CONSUMERS' COOPERATIVES**.

Cotton Manufacturers, National Association of, founded in 1854 for service to cotton mills in the northeastern section of the United States. Membership about 450. President, Russell T. Fisher. Headquarters, 80 Federal Street, Boston, Mass. Student Honor Medals were awarded in various textile schools annually.

Credit Men, National Association of, founded in 1896 as a nonprofit making organization of manufacturers, wholesalers, and bankers affiliated for the promotion of wholesome business by maintaining a sound credit structure. Membership, 20,000. President, R. C. Wilson. Secretary-Treasurer, Henry H. Heimann. Headquarters, One Park Avenue, New York City. The Annual Credit Congress will meet in Cincinnati, May 10-14, 1942.

Credit Union National Association, founded in 1934 to organize and service credit unions in the United States and Canada. Membership, 48 State leagues serving 3,000,000 members. President, William Reid. Managing Director, Roy F. Bergengren. Headquarters, 1342 E. Washington Street, Madison, Wis. Canadian credit unions were accepted to membership in 1940, and 1,364 new unions were organized. The eighth annual meeting will be held in Madison, Wis., May, 1942.

Cruelty to Animals, The American Society for the Prevention of, listed under **Prevention**.

Daughters of the American Revolution, National Society of, founded in 1890 for historical, educational, and patriotic purposes. Membership about 143,000 in 2,554 chapters. President General, Mrs. William H. Pouch. Headquarters, Memorial Continental Hall, Washington, D. C. During 1941 gifts totaling \$100,000 for 14 approved schools for foreign-born and Southern mountaineers were approved. Regular activities included instruction in the right use of leisure and respect for rights of others to 255,584 children in Junior American Citizens Clubs and distribution of about 300,000 manuals for citizenship, in 16 languages, to aid in naturalization. High school seniors from every State, winners of the Good Citizenship Contest, were given a trip to Washington. About 58,000 copies of the *National Defense News* were distributed. Hundreds of thousands of Flag Codes and copies of other patriotic literature were handed out. Through some 1,400 clubs, the Society furthered its educational endeavors in training in Girl Home Making.

Daughters of Union Veterans of the Civil War, organized in 1885 to perpetuate the memories of our fathers and their loyalty to the Union, and to keep alive the history of those who participated in that heroic struggle for the maintenance of free government. Membership, 45,000. National President, Mrs. Glennola G. Sill. Treasurer, Miss Gracina Hurd. Headquarters, Washington, D. C. Placing of memorial wreaths to the Grand Army of the Republic at the Court House, Columbus, Ohio, at Lincoln Memorial, Washington Monument, Washington, D. C., and at the Civil War Unknown and World War Unknown Tombs in Arlington and Battleground Cemetery, were the principal happenings of 1941.

Day Care of Children, Joint Planning Board on the. See **CHILDREN'S BUREAU**.

Defend America, Committee to. See **UNITED STATES under Foreign Affairs**.

Democracy, Council for, founded in August, 1940, and dedicated to the propagation of an American faith in democracy. Membership, 120. Chairman, Raymond Gram Swing. President, Ernest Angell. Secretary, Evans Clark.

Headquarters: 285 Madison Avenue, New York City. The program of the Council comprises publications, radio programs, public rallies, editorial releases, a speakers service, and community and organization cooperation. During 1941 huge Council-sponsored rallies were held in Bridgeport, Conn., and Madison Square Garden, New York City. Over the radio, James O'Neary was presented in "New Year's Resolution for Americans"; an Easter Sunday roll call of the occupied nations of Europe, "We Shall Live Again," was broadcast around the world, with European spokesmen comprising Princess Juliana, Crown Prince Olaf, Eve Curie, and Ignace Jan Paderewski. The radio series, "Speaking of Liberty," was broadcast for 19 weeks. A second series was begun later in the year. The Council published two monthly clip-sheets containing pro-democracy editorial material. One of these, *News and Features*, was used by nearly 900 newspapers. In education, cooperation was maintained with professional societies. The most notable achievement in the field of Community Activities was the guidebook, *Defense on Main Street*, supplemented by a periodic bulletin, *Action*. Seven pamphlets were issued to help Americans understand the basic issues on which they must make decisions.

Democratic Action, Union for, founded May 10, 1941, to carry on a two-front fight for democracy, at home and abroad, to oppose totalitarianism in all forms, to organize American liberals to give progressive meaning to the present war against Fascism. Membership: 5,000. Chairman: Dr. Reinhold Niebuhr. Secretary: Murray Gross. Headquarters: 202 West 40 Street, New York City. The national convention was held in February, 1941. See **SOCIALISM**.

Dental Association, American, founded in 1859 for educational purposes. Membership: about 52,000. President: Oren A. Olver. General Secretary: Harry B. Pinyon. Executive Secretary: Gerald D. Timmons. Headquarters: 212 E. Superior Street, Chicago, Illinois. The 1942 meeting will be held in Boston, Mass. See **DENTISTRY**.
Distilled Spirits Institute. See **LIQUOR PRODUCTION**.
Dress Institute. See **FASHION EVENTS**.

Eagles, Fraternal Order of, a Fraternal and beneficial Order founded in 1898. Membership: 700,000. Grand Worthy President: George C. Tank. Grand Secretary: John A. Abel. Headquarters: Kansas City, Missouri.

Economic Association, American, founded in 1885 to encourage research and freedom of discussion and issue publications. Membership: 3,372 members, 1,317 subscribers. President: Sumner H. Slichter. Secretary-Treasurer: James Washington Bell. Headquarters: Northwestern University, Evanston, Ill. The annual meeting in New York City, Dec. 27-30, 1941, was devoted to current vital problems, such as economic adjustments after wars, the tax problem, the determinants of investment decisions, problems of international economic policy for the United States, the changing position of the banking system and its implications for monetary policy, the determination of wages, the schism in agricultural policy, economic problems of American cities, the cost and demand functions of the individual firm, the work of the Temporary National Economic Committee, trade unions and the law, and the lasting effects of the war and the defense program upon economic institutions. In addition to the *American Economic Review*, a quarterly publication, the Association publishes the proceedings of the annual meetings, a handbook or directory, and occasional monographs, e.g., appraisal of the work of the TNEC.

Economic Entomologists, American Association of, founded in 1889 to promote the study and to advance the science of entomology, and to publish the *Journal of Economic Entomology*, etc. Membership: 1,434. President: J. R. Parker. Secretary: Ernest N. Cory. Headquarters: College Park, Md. The 1942 meeting will be held in New York City.

Economic Research, National Bureau of, founded in 1920 to encourage investigation, research, and discovery, and the application of knowledge to the well-being of mankind; and in particular to conduct exact and impartial investigations in the field of economic, social, and industrial science. Membership: 23 members of the Board of Directors. President: W. L. Crum; Executive Director, William J. Carson. Headquarters: 1819 Broadway, New York City. Six publications were issued in 1941 dealing with finance companies, consumer credit, credit practices, residential real estate, national income, capital formation, etc.

Economy League, The National, founded in 1932 as a patriotic, national, non-partisan organization advocating sound Federal finance. Membership: 3,500. Executive Director: H. G. W. Sundelof. Research Director: Willard D. Avant. Headquarters: 280 Madison Avenue, New York City.

Education. See also the societies listed under *Adult Education*, *International Education*, *Kindergarten Association*, *Progressive Education*. For accrediting associations, see the article on **UNIVERSITIES AND COLLEGES**.

Education, American Council on, a council of national educational associations, organizations having related interests, approved educational institutions. State departments of education, and city school systems; founded in 1918 as a center of cooperation and coordination in the field of education. Membership: 542 organizations and in-

stitutions. President: George F. Zook. Chairman: Ben G. Graham. Secretary: George D. Stoddard. Headquarters: 744 Jackson Place, N.W., Washington, D.C. Education and the national defense claimed the first interest of the Council in 1941. Special committees kept in touch with swiftly moving government procedures and to serve as a clearinghouse of information to members. High officials of the War Department, the Navy Department, the Council on National Defense, the National Resources Planning Board, members of Congress, and others were kept informed concerning educational resources, both of personnel and facilities. The Council sought the judgments of educators in all quarters of the country and made these judgments known to officials responsible for government policy. By means of bulletins, letters, and conferences, the Council kept educators informed concerning the plans of government as those plans were being formulated. The work of the standing committees was continued during the year. The annual meeting will be held May 1-2, 1942. See **EDUCATION YOUTH MOVEMENT**.

Education Association of the United States, National (N.E.A.), founded in 1857 to advance the interests of the teaching profession, promote the welfare of children, and foster the education of all the people. Membership: 211,191. President: Myrtle Hooper Dahl. Executive Secretary: Willard E. Givens. Headquarters: 1201 Sixteenth Street, N.W., Washington, D.C. A National Commission for the Defense of Democracy Thru Education was created in 1941. The Department of Business Education established offices in the N.E.A. building. The 1942 annual meeting will be held in Denver, June 28-July 2. See **EDUCATION under War Demand**.

Education by Radio, National Committee on, founded in 1930 to act as spokesman for organized education, to act as a clearinghouse for information about educational broadcasting, and to promote the educational use of radio and cooperative radio councils. Membership: nine representatives of constituent organizations. Chairman: Dr. Arthur G. Crane. Secretary: Ruth L. Goodnoo. Headquarters: 1 Madison Avenue, New York City.

Electrical Engineers, American Institute of, founded in 1884 for the advancement of the theory and practice of electrical engineering and allied subjects and maintenance of high professional standards. Membership: 18,831. President: David C. Prince. National Secretary: H. H. Henline. Headquarters: 33 West 39 Street, New York City. The Lamme Medal was awarded in 1941 to Comfort A. Adams for work in alternating current machinery and electric welding. The 1942 national conventions will be held in New York City, January 26-30, Chicago, June 22-26, and Vancouver, B.C., September 9-11.

Elks, Benevolent and Protective Order of, a fraternal organization founded in 1868. Membership: 500,000. Grand Exalted Ruler: John S. McClelland. Grand Secretary: J. F. Masters. Headquarters: Elks National Memorial Building, Chicago, Ill. A Commission on National Defense and Public Relations is cooperating with the U.S. Government in National Defense, with each of the 1,400 Subordinate Lodges helping obtain enlistments of aviation cadets. The 1942 Annual Grand Lodge Session will be held in Portland, Ore.

Emergency Cooperating Committee for Children and Youth. See **YOUTH MOVEMENT**.

Engineering Societies. See under *Civil Engineers*, *Electrical Engineers*, *Mechanical Engineers*, *Mining and Metallurgical Engineers*.

English Institute, The, founded in 1939 to afford an opportunity for mature scholars in the field of English to meet together in a series of informal conferences and discuss questions of literary and philological research. In 1941 the conferences of the third session were attended by 130 persons. Chairman: Prof. Tucker Brooks. Secretary: Rudolf Kirk, Rutgers University, New Brunswick, N.J. Selected papers read at the sessions are published in the *English Institute Annual*, edited by Rudolf Kirk. The third volume will appear in January, 1942. The fourth session is to be held, Sept. 7-12, 1942, at Columbia University, New York City.

English-Speaking Union of the United States, founded in 1920 to draw together the English-speaking people of the world. It cooperates with the English-Speaking Union of the British Empire, Dartmouth House, London. Membership: about 15,000. Headquarters: 80 Rockefeller Plaza, New York City. President: Dr. James R. Angell. Chairman: Henry J. Fisher. Treasurer: Charles A. Wright. General Secretary: Frank S. Coan. Activities in 1941 included sponsoring a nation wide concert tour by Gracie Fields which netted more than \$100,000 for British war relief, enlisting members in 40 branches in active relief work for Britain, appointing a Policy Committee with Lewis Douglas as Chairman, and arranging speaking tours.

Engraving, American National Committee of. See **ART under Prints**.

Entomologists, American Association of Economic, listed under *Economic*.

Etchers, Society of America. See **ART under Prints**.

Ethnological Society, American, founded in 1842. The Society meets regularly for lectures and discussions of scientific work and problems in anthropology, and publishes a series of monographs. Membership: 247. President: Dr.

Harry Shapiro Secretary: Dr. Marian W. Smith. Headquarters: American Museum of Natural History—New York Academy of Sciences.

Eugenics Society, Inc., American, founded in 1926 to improve the quality of future citizens through formulation of eugenic policies, public education, and encouragement of research. Membership: 650. President Dr. Maurice A. Bigelow. Secretary: Rudolf C. Bertheau. Headquarters, RKO Building, Rockefeller Center, New York City. The next annual conference will be held in the spring of 1942.

Family Planning Association. See BIRTH CONTROL.

Family Security Committee. See DEFENSE HEALTH AND WELFARE SERVICES.

Farmers' Educational and Cooperative Union of America, founded in 1902 to secure equity, establish justice, and apply the Golden Rule. Membership: about 90,000, not including honorary members. President James G. Patton. Secretary J. M. Graves. Headquarters 18 N. Klein Street, Oklahoma City, Okla. The National Convention was held at Topeka, Kan., Nov. 17-19, 1941. See CONSUMERS' COOPERATIVES.

Fashion Group. See FASHION EVENTS.

Federal Union, Inc. See article on UNION NOW.

Field Service, American, a volunteer ambulance service founded at the beginning of World War I to care for and remove the wounded from the front lines. With the outbreak of the present war, the Service renewed its registration with the State Department and provided ambulances for the French, but, with the fall of France, turned over available equipment for service with the British East Africa Force. By the late summer of 1941, there had been given to the American Ambulance, Great Britain, through the American Ambulance Service, a total of 115 units or 149 vehicles—ambulances, surgical units, and mobile first aid posts. Headquarters, 60 Beaver St., New York City.

Fight for Freedom Committee, Inc., founded in April, 1941, to educate public opinion to the belief that war must be waged on the enemies of democracy. Headquarters 1270 Sixth Avenue, New York City. The Committee was established at Madison Square Garden, New York City, in a spirited rally. The Thanksgiving radio program, "Food and Freedom," featured an address by U. S. Secretary of Agriculture, Claude R. Wickard.

Fire Protection Association, National, founded in 1896 to promote the science and improve the methods of fire protection and prevention, to obtain and circulate information, and to secure the cooperation of its members in establishing safeguards against fire loss. Membership, 5,551. President Alvah Small. General Manager Percy Bugbee. Headquarters, 60 Battery March Street, Boston, Mass. See FIRE PROTECTION.

Fire Underwriters, National Board of, an educational, factual, and engineering organization founded in 1866 and supported by the capital stock fire insurance business. Membership, 193. President R. P. Barbour. General Manager W. E. Mallaheu. Headquarters, 85 John Street, New York City. The 1942 meeting will be held May 28 in New York City. See INSURANCE.

Fire Waste Council, National. See FIRE PROTECTION.

Food Technologists, The Institute of, established in 1939 to provide a professional organization which will facilitate interchange of ideas, stimulate and promulgate the results of research and work in the application of science to the food industry, and encourage the employment of food technologists. Membership: about 1,100. President Lawrence V. Burton. Secretary-Treasurer George J. Huckler. Geneva, New York. During 1941 the annual convention was held at Pittsburgh, Pa., with important scientific programs and exhibits of food machinery and laboratory equipments. An award was given to the first President, Samuel O. Prescott. The establishment of the Nicholas Appert Medal and of regional sections—Northern California, Southern California, New England, and Pittsburgh—was also recorded. The 1942 meeting will be held in Minneapolis, Minn., June 22-24.

Foreign Born, American Committee for Protection of, listed under Protection.

Foreign Policy Association, Inc., founded in 1918 to carry on research and educational activities to aid in the understanding and constructive development of American foreign policy. Membership, 18,400. President Frank Ross McCoy. Secretary Dorothy F. Leet. Headquarters, 22 East 38 Street, New York City. The Association publishes a weekly *Bulletin* including the Washington News Letter, semi-monthly *Foreign Policy Reports* and *Pan American News*, and *Headline Books*. The annual meeting will be held in December, 1942. Discussion luncheons are scheduled periodically at the Hotel Astor, New York City, and in eighteen branch cities. The program "America Looks Ahead," is broadcast over N.B.C. on Sundays.

Foreign Relations, Inc., Council on, founded in 1917 to study the international aspects of America's political, economic, and financial problems. Membership: 500. President Norman H. Davis. Executive Director: Walter H. Mallory. Headquarters, 45 East 65 Street, New York City. The Council holds meetings and conferences. It carries on a program of research and publishes: a quarterly review, *Foreign Affairs*, two annuals, *The United States in World Affairs* by Shepardson and Scroggs and *The Political Handbook of the World*, and individual volumes on international questions.

Foresters, Society of America, founded in 1900 to represent, advance, and protect the interests and standards of the profession of forestry and to provide a medium for the exchange of professional thought. Membership: 4,708. President: Dr. Henry Schmitz. Executive Secretary: Henry E. Clepper. Headquarters: Mills Building, Washington, D. C. The 1942 meeting will be held in Salt Lake City, Utah, October 7-10.

Forestry Association, The American, founded in 1875, is a citizens' organization for the advancement of intelligent management and use of the country's forests and their related resources of soil, water, wildlife, and outdoor recreation. Membership, 14,000. President W. S. Rosecrans. Executive Secretary Ovid Butler. Headquarters, 919 Seventeenth Street, Washington, D. C. In addition to publication of two magazines, *American Forests* and *Conservation*, the Association carries on educational projects in various fields.

Foster Parents' Plan for War Children, Inc., founded in 1936 to help children of all nationalities suffering as a result of war. Executive Chairman: Edna Blue. Chairman: Joseph Gelebert. Secretary-Treasurer: Ann Landress. Executive Secretary Eric G. Mugeridge. Headquarters, 42 Woodberry Down, London, England, 55 West 42 Street, New York City. Activities of 1941 included the appointment of Russell Maguire as Honorary Chairman, and opening of the Hampstead and Priestley nurseries in England. Meetings, as a general rule, are not held. People become Foster Parents through the recommendation of other Foster Parents.

France Forever, founded September, 1940, to afford the voice of Free France opportunity to be heard in the United States, and to help Great Britain, to aid American preparedness, to aid French colonies in resisting aggression, etc. Membership: about 10,000. President Eugene J. Houdry. Secretary: Pierre Quilleret. Headquarters, 50 Rockefeller Plaza, New York City. Activities of 1941 included mass meetings on July 14 (Bastille Day) and November 11 (Armistice Day), and a banquet in New York City, with Dorothy Thompson, Edgar Ansel Mower, and Harold L. Ickes as speakers.

Fraternal Congress of America, National, founded in 1886 to unite all fraternal benefit societies of America for mutual improvement and concert of actions. Membership, 86 societies. President Thomas R. Heaney. Manager: Foster F. Farrell. Headquarters, 35 E. Wacker Drive, Chicago, Ill. The 1942 meeting will be held in September.

French Relief Societies, Inc., Coordinating Council of, established March, 1941, to coordinate the work of Committees working for France in the United States, send packages to French prisoners of war in Germany, raise funds for the work of the American Friends Service Committee in unoccupied France. Membership, 12 member committees. President Forsyth Wickes. General Secretary: Miss Sylvia Holt. Headquarters, 4 West 58 Street, New York City. Meetings are held monthly in New York City.

Friends of France, Inc., American, organized in 1939 to send financial and material help to the non-combatants of France. Membership, about 400. President: Miss Anne Morgan. Chairman of the Board: Mrs. Harry A. Woodruff. Secretary: Daisy Fiske Rogers. Headquarters, 5 East 47 Street, New York City. The carrying on of relief, social service, health, and recreation work in the departments of the Aisne, Ardennes, and Haute Vienne in France was continued in 1941. Also, as a member Society of the Coordinating Council of French Relief Societies, the group aided children in unoccupied territories of Europe, and in sending food packages to French prisoners of war in Germany. The 1942 annual meeting will be held the fourth Thursday in January.

Future Farmers of America (F.F.A.), founded in 1928 to strengthen the confidence of farm boys in themselves and their work, create interest in farming occupations and love of country life; improve the rural home, scholarship, and recreational activities. Membership, 240,972. President: Irvin Schenk. National Executive, Secretary: W. A. Ross. Headquarters, U. S. Office of Education, Federal Security Agency, Washington, D. C. During 1941 the Star Farmer of America Award was made to Duane Munter, Coleridge, Neb., Gold Emblem Associations were Montana, Oregon, Texas, Wyoming; Gold Emblem Chapters were Hanford, Calif., Hamilton, Mo., Norman, Okla., Salem, Ore. Winner of the Public Speaking Contest was R. L. Jones, Carrollton, Ala. The 1942 F.F.A. Convention will be held in Kansas City, Mo. in October, during the week of the American Royal Live Stock Show.

Garden Club of America, founded in 1913. Membership, about 8,000. Secretary: Mrs. Barent Lefferts. Headquarters, 598 Madison Avenue, New York City. The 1942 meeting will be held in St. Paul, Minn., in June.

Gas Appliance and Equipment Manufacturers, Association of. See GAS INDUSTRY.

Gas Association, American, founded in 1918 by holding companies, service companies, gas operating companies, manufacturers of gas appliances and equipment, and individuals. Membership, 5,300. President George S. Hawley. Managing Director: Alexander Forward. Secretary: Kurwin R. Boyce. Headquarters, 420 Lexington Avenue, New York City. In 1941 the Charles A. Munroe Award was

granted to Thomas R. Weymouth, formerly Vice President of the Columbia Gas and Electric Corporation. The 1942 annual convention will meet in San Francisco in October. See GAS INDUSTRY.

General Contractors of America, Inc., The Associated, a trade association founded in 1918. Membership: 2,765. President M. W. Watson. Managing Director H. E. Foreman. Headquarters Munsey Building, Washington, D.C. The annual convention will be held at Seattle, Wash., Feb. 16-19, 1942. A.G.C. members performed a large portion of the National Defense Construction Program initiated in 1940.

Geographical Society, American, a research institution founded in 1852. Membership 3,211. President, Roland L. Redmond. Director, Dr. John K. Wright. Headquarters Broadway at 156th Street, New York City. During 1941 the Society published *Focus on Africa* by Richard U. Light, with photographs by Mary Light; *European Possessions in the Caribbean Area* by R. R. Platt, J. K. Wright, J. C. Weaver, and J. E. Fairchild, and four sheets of the *Map of Hispanic America, 1,100,000*, bringing the number to 101 out of a total of 107 sheets. The Charles P. Daly Medal for 1941 was awarded to Dr. Julio Garza Nieto, Director of the Office of Longitudes, Republic of Colombia.

Geographical Society, Royal, founded in 1830 for the advancement of geographical science. Membership circa 6,000. President Sir George Clerk. Secretary Arthur R. Hinks. Headquarters Royal Geographical Society, Kensington Grove, London, S.W. 7. The Founder's Medal was awarded in 1941 to Major P. A. Clayton, the Patron's Medal to Dr. Isaiah Bowman. The Society publishes the monthly *Geographical Journal*, technical publications, and maps.

Geographic Society, The National, founded in 1888 for the increase and diffusion of geographic knowledge. Membership 1,175,000. President Gilbert Grosvenor. Secretary George W. Hutchinson. Headquarters 1146 Sixteenth Street, Washington, D.C. During the year The Society cooperated for the third season with the Smithsonian Institution in sending an archeological expedition to Mexico. Under the leadership of Matthew W. Stirling, the party in 1939 discovered a monument in Veracruz inscribed with the New World's oldest recorded date, 291 B.C. (Spinden correlation), in 1940 five colossal pre-Columbian sculptured heads were excavated, and in 1941 the finest and largest cache of jade artifacts—782 specimens—yet found in America was uncovered. The Franklin L. Burr Prize was given to Mr. Stirling and Mrs. Marion I. Stirling for their explorations. Mrs. Stirling served as The Society's field secretary during the expeditions. The prize carried an award of \$500 to each of the recipients. A Society grant to Mr. and Mrs. William Albee enabled them to study and photograph the animal life in the Sierra Nevada Mountains of California. Geographic investigations made outside of the United States included those of W. Robert Moore in the Union of South Africa, Dr. Maynard Owen Williams in India, and Harrison Howell Walker in Australia. In addition to its official publication, the *National Geographic Magazine*, the Society prepared a scientific monograph on the findings made by the National Geographic Society-National Bureau of Standards Solar Eclipse Expedition to Patos, Brazil, in 1940.

German-American Bund. See FASCISM.

Gideons, The, International, founded in 1899 to advance the placing of Bibles in hotels, hospitals, penal institutions, and public schools. Membership about 10,000. President A. E. Lewis. Secretary Nellie F. Dewar. Headquarters 202 South State Street, Chicago. During 1942 the organization distributed Testaments to the armed forces. The 1942 International Convention is scheduled for Cleveland, July 23-26.

Girl Scouts, Inc., founded in 1912 to help girls develop as good citizens and resourceful people through group self-government and activities in the following fields: homemaking, arts and crafts, nature, the out-of-doors, literature and dramatics, community life, international friendship, sports and games, health and safety, music and dancing, and vocational exploration. Membership 664,776. President, Mrs. Alan H. Means. National Director, Mrs. Paul Rittenhouse. Headquarters 155 East 44 Street, New York City. Girl Scout Anniversary Week was celebrated Mar. 12-18, 1941, and Girl Scout Week, Oct. 26-Nov. 1, 1941. Held to foster inter-American friendship, the Second Western Hemisphere Encampment, Aug. 11-25, 1941, was attended by 160 delegates from 16 countries. Girl Scouts of all ages throughout the country put special emphasis on service in 1941. In the fall, the organization launched a special program of civilian defense training, Senior Service Scouting, for girls from 15 to 18. Girls qualified for the Service insignia by becoming First Aiders and demonstrating a number of practical skills. After becoming Service Scouts, they went on to specialize in one of four fields: child care, food; transportation and communication; clothing, shelter and recreation. The next national convention will be held in October, 1943.

Governors' Conference. See under *State Governments* below.

Grange, The National, an Order formed in 1867 to give to the American farmer better social and educational opportunities, economic betterment, and higher spiritual and

patriotic idealism. Membership 800,000 in 8,000 subordinate Granges. Master Albert S. Goss. Secretary Harry A. Caton. Headquarters, 1343 H St., N.W., Washington, D.C. The National Grange Session will convene at Worcester, Mass. in 1942.

Greek War Relief Association, Inc., organized in 1940 to collect funds in America for the civilian population in Greece. Membership 61. Honorary National Chairman Harold S. Vanderbilt. National Chairman Most Rev. Athenagoras. National Secretary K. P. Taolanos. Headquarters 730 Fifth Avenue, New York City. During 1941 a nation-wide radio program was broadcast, "America Calling." A benefit performance, "Greek Festival for Freedom," was presented at the Radio City Music Hall, New York City, and similar benefits were given in theaters throughout the country. The 1942 meeting will be held in New York City.

Group Health Association. See CONSUMERS' COOPERATIVES.

Hadassah (The Women's Zionist Organization of America, Inc.) founded in 1912 to foster Zionist ideals in America, and to conduct activities in Palestine which include promotion of public health, land redemption and afforestation, and immigration and colonization through Youth Aliyah. Membership 100,000. President Mrs. David de Sola Pool. Executive Secretary Miss J. N. Leibel. Headquarters, 1819 Broadway, New York City. The beginning of Hadassah's 30th year of work and the 24th anniversary of the Balfour Declaration were celebrated in 1941. An American affairs program of aid to defense and democracy forces was launched and the educational program was expanded. The next annual convention will be held in October, 1942.

Health. See under *Group Health, Public Health*.

Health Council, National, founded in 1921 to consolidate and correlate the activities of the member agencies and other activities for the betterment of health. Membership 18 member agencies. President Dr. Kendall Emerson. Secretary Dorothy Deming. The annual meeting is held in January or February of each year.

Hebrew Congregations, Union of American. See JFW ISRI CONGREGATIONS.

Henry George School of Social Science, founded in 1933 to teach the philosophy of Henry George. Membership hundreds of volunteer instructors throughout the country and over 20,000 graduates. Director Frank Chodorov. Headquarters 30 East 29 Street, New York City. Classes are held, not only in the headquarters building, but in public buildings, Y M C A. and church buildings, homes, offices, etc.

Highway Users Conference, National, a fact-finding, information-giving, coordinating agency of national groups of motor vehicle users, founded in 1932 to bring about taxation and regulation policies that will insure to the public the maximum benefits of highway facilities. Membership 29 national organizations. Chairman Alfred P. Sloan, Jr. Director Chester H. Gray. Headquarters 938 National Press Building, Washington, D.C.

Historical Association, American, founded in 1884 to promote historical studies, the collection and preservation of historical manuscripts, etc. Membership 3,600. President Arthur M. Schlesinger. Executive Secretary Guy Stanton Ford. Headquarters, Study Room 274, Library of Congress Annex, Washington, D.C. During 1941 the George Louis Beer Prize of \$200 was awarded to Arthur J. Marder for his book *The Anatomy of British Sea Power*, and the Albert J. Beveridge Memorial Prize of \$200 was won by Charles Albro Barker for his book *The Background of the Revolution in Maryland*. The annual meeting in 1941 was held in Chicago on December 29-31.

Home Economics Association, American, organized in 1908 for development and promotion of standards of home and family life. Membership approximately 15,000 individuals, 2,500 student clubs, and 11 groups of homemakers. President Gladys Branagan. Executive Secretary Edna Van Horn. Headquarters, 620 Mills Building, Washington, D.C. During 1941 the Association directed its resources toward serving in the national emergency, and at the same time reaffirming the support of its long-time program by striving to meet the need for intensified service of home economics associations to the Federal and State agencies for civilian defense, especially those concerned with nutrition, housing, family welfare, health, consumer goods standards and simplification, consumer interests, and education. In order to facilitate this service, the emergency registration, begun last year, was extended. Five international fellowships were awarded to young women from Argentina, China, and Peru. The Borden Award was granted to Dr. Julia Outhouse. The 1942 meeting will be held in Boston, June 21-25.

Housing Conference, National Public, listed under Public.

Humane Association, The American, founded in 1877 for the prevention of cruelty to children and animals. Membership 11,000. President Sydney H. Coleman. General Manager Walter J. Dethloff, 195 Washington Avenue, Albany, N.Y. The 14th annual Humane Trap Contest, held in 1941, brought in 150 entries. A poster contest was also conducted.

Hygiene. See under *Mental Hygiene, Social Hygiene, Industrial Democracy, League for*, founded in 1905.

with the purpose of education for a new social order based on production for use and not for profit Membership 2,000. President Elizabeth Gilman, Executive Director, Harry W Laidler, Headquarters: 112 East 19 Street, New York City Meetings scheduled in 1942 include a conference on "Business as Usual" in February, and one on some phase of reconstruction, New York City, June 19-21.

Industrial Protection, National Bureau for. See INSURANCE.

Industrial Relations Counselors, Inc., established in 1926 to advance the knowledge and education of human relationships in industry, commerce, and government Director, T. H. A. Piedemann Headquarters: 1270 Sixth Avenue, New York City The organization conducts research, offers a consulting service, mainly for industrial corporations, and maintains a specialized industrial-relations library and an information service Fifteen volumes and six monographs were published by the close of 1941.

Information Bureau, Inc., National, a non profit membership corporation for the protection of contributors and philanthropic agencies, founded in 1918. Chairman Allen Wardell Secretary Leonard J Cushing Acting Executive Secretary D Paul Reed Headquarters 330 West 42 Street, New York City.

Insurance Association, American Foreign. See INSURANCE.

Insurance Commissioners, National Association of. See INSURANCE.

International Education, Institute of, a non-membership organization, founded in 1919 to increase international understanding through interchange of students, circuiting of lecturers, teacher and librarian exchanges, and publication of books, pamphlets, and a *News Bulletin* The Institute serves as a general clearing house of information in its field Director Stephen Duggan Headquarters: 2 West 45 Street, New York City For the academic year 1941-42, 319 fellowships and scholarships were awarded for study at United States colleges and universities and 14 for Americans at foreign universities Events since 1940 included expansion of cultural relations with Latin America and increased assistance for displaced foreign scholars.

Investment Bankers Association of America, organized in 1912 to serve investment bankers, through mutual cooperation, maintenance of high standards of service, self-regulation, and support of appropriate legislation Membership 650 President John S Fleck Headquarters: 33 South Clark Street, Chicago The 30th annual convention was held in Hollywood, Fla., Nov 30 to Dec 5, 1941.

Iron and Steel Institute, American, founded in 1908 to promote the interests of the industry. Membership about 1,800. President Walter S Tower Secretary: G S Rose Headquarters: 350 Fifth Avenue, New York City The Institute's medal was awarded in 1941 to Earle C Smith, Chief Metallurgist, Republic Steel Corporation The 50th general meeting was held in New York, May 22, 1941.

Jewish Welfare Board. See separate article.

Jewish Women, National Council of, founded in 1893 to carry on a program of service to the foreign born, and for education and action in social legislation, international relations, and contemporary Jewish affairs Membership 60,000 in 212 Senior and 109 Junior sections throughout the United States and Canada President Mrs Maurice L Goldman Recording Secretary Mrs Edgar Menderson Headquarters: 1819 Broadway, New York City Activities of 1941 included the Biennial Convention of the National Council of Jewish Juniors, auxiliary group, in Baltimore, Md., and regional conferences, concerned over the application of the Council activities to the National defense program, held in Connecticut, Florida, Indiana, New Jersey, New York, Pennsylvania, Texas, and Virginia Conventions are held triennially, the next being scheduled for 1943.

Joint Distribution Committee, Inc., The American Jewish (J.D.C.), founded during the first World War to give emergency and reconstructive aid to needy Jews overseas The National Council has about 2,800 members Honorary Chairmen, Paul Baerwald, Mrs Felix M Warburg, James N Rosenberg Chairman James H Becker Secretary Moses A Leavitt Headquarters: 100 East 42 Street, New York City Since the outbreak of World War II the Joint Distribution Committee has brought vital help to a million men, women, and children in more than fifty countries throughout the world It is giving daily help to nearly 500,000 Jews in German-occupied Poland, maintains relief and immigration services for the Jews of Greater Germany, and assists the scores of thousands of refugees in unoccupied France, including 35,000 in the internment camps The greatest activity at present is emigration aid to thousands of refugees holding valid visas to countries of asylum The J D C does not remit dollars into Germany and German-occupied lands in carrying out its large-scale assistance there This is accomplished through an emigration clearance arrangement which enables the J D C to hold its dollars in the United States for the purchase of transportation for refugees on non-German steamship lines, while equivalent amounts in Reichsmarks or zlotys are at the same time made available for internal relief work in German lands J D C dollars intended for relief work in France are deposited with the

New York account of the Bank of France which has been blocked by order of the U.S. Treasury Department. No J D C dollars go into Italy, here, too, blocked currency is bought.

Junior Leagues of America, Inc., Association of the, founded in 1921 to unite the 153 local Junior Leagues and through them to educate their members for effective volunteer service in community agencies and for shaping social programs Membership 85,000 President Mrs George V Ferguson Executive Secretary Mrs DeForest Van Slyck, Headquarters: Hotel Waldorf-Astoria, New York City The 1942 annual conference was scheduled in Kansas City, April 27 to May 1.

Juvenile Agencies, National Conference of. See JUVENILE DELINQUENCY.

Keep America out of War Congress, organized in 1938 to promote peace, extend democracy, and strengthen security against want in America The Congress is unalterably opposed to all dictatorships at home or abroad, including Fascism, Nazism, and Communism. Chairman John F Emery Executive Director Mary W Hillier Headquarters: 22 East 17 Street, New York City The National Anti-War Congress was held in Washington, D C, May 30 to June 2, 1941 Officers of the Congress spoke frequently in 1941 on nation-wide radio networks and radio forums, such as *Town Hall*, *Chicago Round Table*, *American Forum of the Air*, *Peoples Platform*, and *Wakes Up America*.

Kindergarten Association, National, founded in 1909 to help secure the advantages of kindergarten education for all the nation's children Membership varies from 2,245 to 8,000 President Maj Bradley Martin Executive Secretary Bessie Locke Headquarters: 8 West 40 Street, New York City As a result of the work done by the Association in 1941, 3,150 children have been enrolled in new kindergartens, bringing the total since 1909 to over 1,032,950 children Weekly Home Education Articles, dealing with child behavior problems, are furnished free of charge to the press and to Home Demonstration Agents; present combined circulation is over 31,844,800. During 1941, a series of articles on "Defense Measures in the Home" was introduced.

King's Daughters and Sons, International Order of The, in 1886 "for the development of spiritual life and stimulation of Christian activities." Membership 55,000 President Mrs Henry S Eloy Secretary Mrs Claude E. Leber Executive Secretary Miss Kate C Hall Headquarters: 144 East 37 Street, New York City The next meeting is scheduled to be held in Jackson, Miss., Apr. 13-16, 1942.

Kiwanis International, founded in 1915 to unite community leaders in each business and profession for civic, social, and welfare service to their towns Membership 112,000 (2,163 clubs) in the United States and Canada. President Charles S Donley Secretary O E Peterson General Office: 520 N Michigan Avenue, Chicago, Ill Over 29,000 community service activities have been completed in the fields of aid to underprivileged children, vocational assistance, urban rural relations, conservation, safety, aid to youth, etc The 1942 convention will be held in Cleveland, Ohio, June 14-18.

Knights of Columbus, a fraternal benefit society founded in 1882 Membership 410,489 Supreme Knight, Francis P Matthews Supreme Secretary Joseph F. Lamb Headquarters: 45 Wall Street, New Haven, Conn.

Knights of Pythias, a fraternal organization founded in 1864 Membership 450,000 Supreme Chancellor Ray O Garber Supreme Keeper of Records & Seal Harry M Love, 1054 Midland Bank Building, Minneapolis, Minn The Supreme Lodge meets biennially, the next meeting to be in August, 1942.

Ku Klux Klan, Inc., Knights of the (K.K.K.), founded in 1915 to organize a solid block of native-born, white, Protestant, Gentile Americans for the purpose of promoting under oath the following principles: the tenets of the Christian religion, white supremacy, protection of pure womanhood, just laws and liberty, closer relationship of pure Americanism; upholding of the Constitution of the United States; sovereignty of State rights; separation of Church and State; freedom of speech and press, closer relationships between Capital and Labor, preventing the cause of mob violence and lynchings; preventing unwarranted strikes by foreign labor agitators; prevention of fires and destruction of property of lawless elements, limitation of foreign immigration; much needed local reforms, law and order Membership: over 5,000,000 Imperial Wizard (President) James Arnold Colcott, Imperial Kligrapp (Secretary) James M. George, Headquarters: 3155 Roswell Road, Atlanta, Ga. An extraordinary Imperial Klivokation (national convention) will be held in Atlanta, Ga., Apr. 2-4, 1942 The purpose of this meeting is the organization of units to the end that American and not alien-minded Congressmen will be selected at the polls in 1942.

Labor Legislation, American Association for, an organization of socially minded economists, lawyers, journalists, government administrators, labor leaders, and employers, founded in 1906 to attack needless industrial evils from the general welfare viewpoint It functions as the American arm of the International Association for Social Progress President Joseph P. Chamberlain Secre-

tary: John B. Andrews. Headquarters. 131 East 23 Street, New York City. In 1941 the quarterly *American Labor Legislation Review* completed its 31st year of publication. The 35th annual meeting was held in New York, Dec. 27-30, 1941, several sessions being held jointly with the related American Economic Association, American Political Science Association, American Sociological Society, and the American Statistical Association Compare LABOR LEGISLATION

Law Institute, The American, founded in 1923 to promote the clarification and simplification of the law and its better adaptation to social needs, to secure the better administration of justice, and to encourage and carry on scholarly and scientific legal work Membership: 750 President. George Wharton Pepper Director William Draper Lewis, Headquarters 3400 Chestnut Street, Philadelphia, Pa. The annual meeting will likely be held in Philadelphia, Pa. May 12-15, 1942 See PRISONS, PAROLE, AND CRIME CONTROL

League of Nations Association, Inc., founded in 1923 to teach the need for the cooperation of all nations in building an international organization as the essential basis of peace Membership 10,000 President Dr. Frank G. Boudreau Director Clark M. Eichelberger Headquarters 8 West 40 Street, New York, N.Y. During 1941 the Association continued its cooperation with the Commission to Study the Organization of Peace by setting up study groups, etc. Also, believing aggression must be stopped before a just peace can be established, it actively cooperated with the Committee to Defend America, whose headquarters are in the Association office The 15th National High School Contest on the organization of peace was held on Apr. 4, 1941; 1,020 schools competed and the winner was given a trip to South America

Learned Societies, American Council of, founded in 1919 to promote the advancement of the humanistic sciences Membership 42 delegates (two from each of 21 constituent societies) Chairman William E. Lingelbach, Director Waldo G. Leland Secretary-Treasurer H. M. Lydenberg Headquarters 1219 Sixteenth Street, N.W., Washington, D.C. The 1942 meeting is to be held in Washington, D.C., January 29-31

Legal Aid Organizations, National Association of, founded in 1911 as a central body to promote legal aid work and organizations, and to cooperate with the judiciary, the bar, and all organizations interested in the administration of justice Membership 50 organizations. President John S. Bradway Secretary Emory A. Brownell, Headquarters 25 Exchange Street, Rochester, N.Y. During 1941 new legal aid facilities were organized in 17 cities in the United States Publications included *Committee Reports and Proceedings for 1941*, *Annual Directory*, *Bulletins*, and the *Legal Aid News Letter* An outstanding activity was the development of legal aid service for men in the armed forces and their dependents in the interests of national defense

Legion of Decency, National, founded in 1934 to review and morally evaluate current entertainment motion pictures and to encourage wholesome standards of morality and decency in the cinema Membership of the Episcopal Committee on Motion Pictures 5 Executive Secretary The Rev. John J. McClafferty Headquarters 35 East 51 Street, New York City See the article on ROMAN CATHOLIC CHURCH

Legislators' Association, American. See under *State Governments* below

Library Association, American (A.L.A.), founded in 1876 to provide complete and adequate library coverage for the United States and Canada Membership 16,000 President 1941-42 Charles H. Brown Executive Secretary Carl H. Milam Headquarters 520 N. Michigan Avenue, Chicago, Ill. The association continued to direct a Rockefeller Foundation grant for a three-year project providing American books for selected popular libraries in Denmark, Eire, England, Finland, France, the Netherlands, Norway, Sweden, and Switzerland, a grant for a three-year project covering work and studies on library cooperation with Latin-America and another grant for microfilming and storing of library materials for research libraries abroad, adopted a policy statement on "The Library—1941"; cooperated with other groups in behalf of national defense and democracy, increased library service through help from State and national aid; issued the *A.L.A. Bulletin*, the *Booklist*, and other professional journals, books on school, college, and public library practice, pamphlets, and book lists; continued work for Federal aid legislation, conducted several library surveys; and administered various foundation grants of funds for books, libraries and library training in United States and Canada. A notable achievement of the year was the organization of the Benjamin Franklin Library, a typical American public library in Mexico City The Newbery Award was granted in 1941 to Armstrong Sperry for *Call It Courage*, Caldecott Award to Robert Lawson for *They Were Strong and Good*, the James Terry White Award to Anne Eaton for *Reading With Children* See the article on LIBRARY PROGRESS

Library Association, The, founded in 1877 (incorporated by Royal Charter in 1898) to unite all persons engaged or interested in libraries, hold examinations and maintain a professional register, promote the establishment

of public libraries, encourage bibliographical study, publish journals, and hold conferences. Membership 6,250. President Arundell Eadale, Secretary P. S. J. Welsford, Headquarters Chaucer House, Malet Place, London, W.C.1. The Association's Carnegie Medal for an outstanding children's book published in Great Britain during 1940 was awarded to Miss Kitty Barne for *Vistors from London*.

Lions Clubs, International Association of, founded in 1917 as a national organization for local Lions Clubs, composed of representative business and professional men interested in the development of their communities Membership 150,000 in 4,200 clubs. President George R. Jordan Secretary-General Melvin Jones Headquarters 332 S. Michigan Avenue, Chicago, Ill. Community activities are grouped under eight headings: boys and girls, citizenship and patriotism; civic improvements; community betterment; education; health and welfare, safety; sight conservation and aid to the blind Projects completed in 1941 totaled 58,789. The 1941 program featured studies and discussions of national and international problems and support of defense programs throughout the Western Hemisphere Slogan Liberty, Intelligence, Our Nation's Safety The 26th Annual Convention will be held in Toronto, Canada, July 21-24, 1942

Lumber Manufacturers Association, National. See LUMBER

Management Association, Inc., American, founded by a merger of predecessor organizations in 1923 to provide executives of commercial and industrial companies with a means of exchanging information on management policies and techniques Membership 4,400 President Alvin E. Dodd Chairman of the Board William L. Batt Secretary Henry J. Howlett Headquarters 330 West 42 Street, New York City Scheduled meetings for 1942: Personnel Conference, Chicago, February 4-6; Marketing Conference, New York City, March 4-5; Financial Management Conference, New York City, March 24-25; Packaging Conference, New York City, April 14-17; Production Conference, New York City, May 13-14; General Management Conference, New York City, June 5, and Insurance Conference, New York City, June 8-9

Manufacturers, National Association of (N.A.M.), an organization of individuals, firms, and corporations engaged in manufacturing, founded in 1895 with the following general objectives: (1) the promotion of the industrial interests of the United States; (2) the fostering of the domestic and foreign commerce of the United States; (3) the betterment of the relations between employers and their employees; (4) the protection of the individual liberty and rights of employer and employee; (5) the dissemination of information among the public with respect to the principles of individual liberty and ownership of property, (6) the support of legislation in furtherance of those principles and opposition to legislation in derogation thereof Membership 8,000 President William P. Witherow, Secretary Noel Sargent Headquarters 14 West 49 Street, New York City The Association has a number of standing committees and advisory groups. The Committee on Economic Policy works in the entire basic field covered by the TNEC investigation. The Committee on Economic Security analyzes existing social security legislation and considers all new proposals, non-governmental as well as governmental, for the promotion of economic security Under the sponsorship of the Employment Relations Committee of the N.A.M. a two weeks Institute on Employment Relations was held in conjunction with the University of Vermont, Aug. 18-22, 1941 This has become an annual event This Committee has published "What Employes Think," "The Closed Shop," "Suggested Employment Procedures," "Do Good Working Conditions Pay?" and "Industrial Health Practices" The Committee on Study of Depressions has issued two special reports on the depression problem The Committee on National Defense was formed to help the Government organize the nation's industrial resources in the interests of national defense In 1940-41 the Association conducted a nation-wide survey "Preparedness through Production" in an effort to bring to light all the industrial equipment available for defense production The information resulting from this survey was made available to the OPM officials in Washington and proved of real value in facilitating the placement of sub-contractors on defense work. In addition the Association sponsored 38 defense clinics held throughout the country during 1940. Also, a survey was undertaken to determine the extent of unemployment which would result from priority and allocation rulings The Association in 1941 greatly extended its activities into the field of public schools and women's organizations and strived to bring about a greater understanding between clergymen and industrialists. The Association has for the past nine years sponsored the most widespread and complete public relations program ever undertaken by organized industry to tell its story to the general public This public information program is carried on by the National Industrial Information Committee. In December of each year the Association sponsors the Congress of American Industry at the Waldorf-Astoria Hotel in New York City. See EDUCATION under *Textbook Criticism*

Maple Leaf Fund, founded in May, 1940, as an American-Canadian organization for war relief in the British

Empire, Membership: 14,000. **President:** William H. Coverdale. **Secretary:** Kenneth C. Bell. **Headquarters:** 601 Fifth Avenue, New York City. A report of operations up to July 31, 1941, showed disbursements of \$450,317 to Great Britain, and \$53,778 to Canada; operating costs totaled \$60,385, and cash and merchandise on hand came to \$618,184.

Marine Insurance Syndicate, American. See **INSURANCE**.

Masons, Masonic Service Association. See **FREEMASONRY**.

Mathematical Society, American, founded in 1888 for the promotion and publication of research in mathematics. **Membership:** 2,400. **President:** Prof. Marston Morse. **Secretary:** Prof. J. R. Kline. **Headquarters:** Low Memorial Library, Columbia University, New York City. A War Preparedness Committee was active in problems of research and instruction during 1941. At meetings of the Society there were a number of symposia on applied mathematics. Meetings in 1942 will be held in New York City in February, April, October, and December, Ithaca, N.Y., in September, and Notre Dame, Ind., in November.

Mayors, United States Conference of, founded in 1932 as a clearing house for American cities on problems of municipal government. **Membership:** 190 cities over 50,000 in population. **President:** Mayor F. H. LaGuardia. **Executive Director:** Paul V. Betters. **Headquarters:** 730 Jackson Place, Washington, D. C.

Mechanical Engineers, The American Society of, founded in 1880 to promote mechanical engineering and allied arts and sciences. **Membership:** 16,200. **President:** James W. Parker. **Headquarters:** 29 West 39 Street, New York City. The society participated in the national defense program through public meetings devoted to ordnance manufacture discussion, committee service in research and standardization, and the assembly of records of individual members available for key positions in the defense program. At the annual meeting, Dec. 3, 1941, the A. S. M. E. Medal was awarded to Theodore von Kármán; the Holley Medal to John C. Garand; the Warner Medal to Dr. Richard V. Southwell (London); the Melville Medal to Roger V. Terry; and the Pi Tau Sigma Award to R. Hosmer Norris. Meetings are scheduled to be held in Houston, Tex., Mar. 23-25, 1942; Cleveland, Ohio, June 8-11, Rochester, N.Y., October 12-14, and New York City (annual meeting), November 30-December 4.

Medalists, Society of. See **ART** under **Sculpture**.

Medical Association, American, founded in 1847 to promote the science and art of medicine and the betterment of public health. **Membership:** 118,107. **President:** Frank H. Lahey. **Secretary and General Manager:** Olin West. **Headquarters:** 535 N. Dearborn Street, Chicago. The Distinguished Service Medal and Citation for distinguished service in the science and art of medicine was awarded, June 2, 1941, to Dr. James Ewing, New York. The Association will meet in Atlantic City, N. J., June 8-12, 1942. Compare **MEDICINE AND SURGERY**.

Medical Association, Canadian, founded in 1867 and interested in all matters concerning the practice of medicine. **Membership:** 5,000. **President:** Gordon Fahrni. **General Secretary:** T. C. Routley. **Headquarters:** 184 College Street, Toronto, Canada. The Association will meet in Jasper Park, Alberta, June 15-19, 1942.

Mental Hygiene, Inc., The National Committee for, founded in 1909 to promote interest and action throughout the United States in the prevention and control of mental illness and the conservation of mental health. **Membership:** 770. **President:** Dr. Adolf Meyer. **Medical Director:** Dr. George S. Stevenson. **Associate Secretary:** Paul O. Komora. **Headquarters:** 1790 Broadway, New York City. In 1941, the National Committee, among other undertakings, embarked on a pioneer experiment in the teaching of mental hygiene to children, through the conduct of "Human Relations Classes" in public schools in Delaware and New York. The 1942 meeting of the National Committee is to be held in New York City the second Thursday in November.

Meteorological Society, American, founded in 1919 for the advancement and diffusion of knowledge of meteorology (including climatology) and its application to public health, agriculture, engineering, transportation, and other forms of industry and commerce. **Membership:** about 1,400. **President:** F. W. Reichelderfer. **Secretary:** Charles F. Brooks. **Headquarters:** Blue Hill Observatory, Milton, Mass.

Mineralogical Society of America, founded in 1920 for the advancement of mineralogy, crystallography, petrology, and allied sciences. **Membership:** about 1,000. **President:** A. F. Buddington. **Secretary:** Paul F. Kerr. **Headquarters:** Columbia University, New York City. During 1941, Prof. Esper S. Larson, Jr., was awarded the Roebbing Medal. The annual meeting was held in December at Boston.

Mining and Metallurgical Engineers, American Institute of, founded in 1871 to promote the arts and sciences connected with the production of useful minerals and metals and the welfare of those employed in these industries. **Membership:** 11,227. **President:** Eugene McAuliffe. **Secretary:** A. B. Parsons. **Headquarters:** 29 West 39 Street, New York City. The William Lawrence Saunders Medal was awarded in 1941 to Herman C. Bullinger,

the Lucas Medal to Conrad and Marcel Schlumberger; the Hunt Award to G. E. Steudel; and the Johnson Award to Carl F. Hoffman. The 1941 annual meeting took place, February 12-15, in New York City with an attendance of 2,500, the fall meeting in Duluth, Minn.

Mission to Lepers, Inc., The American, organized in 1920 to aid and preach the Gospel to lepers and to encourage national segregation of lepers when and wherever possible. **Membership:** 41,000. **President:** Dr. William Jay Scheffelin. **General Secretary:** Dr. E. R. Kellersberger. **Associate Secretary:** Dr. Raymond P. Currier. The main event of 1941 was the 34th annual meeting, October 16-17. The 1942 meeting will be held October 22-23.

Modern Language Association of America (M.L.A.), organized in 1883 to promote literary and linguistic research in all the fields of the Modern Languages and Literatures. **Membership:** 4,150. **President:** John A. Walz. **Secretary:** Perry W. Long. **Headquarters:** 100 Washington Square, New York City. During 1941 the Association published 12 books. The 1942 meeting will be held in Washington, D. C., during the Christmas holidays.

Modern Woodmen of America, a fraternal life insurance society formed in 1888. **Membership:** 438,000. **President:** Oscar E. Aleshire. **Secretary:** J. G. Ray. **Headquarters:** Rock Island, Ill. The Society's 1941 Head Camp or national convention ratified an agreement with the Boy Scouts of America, through which Modern Woodmen undertook a nationwide sponsorship of Boy Scout troops.

Moose, Loyal Order of (Supreme Lodge of the World), a fraternal organization founded in 1888. **Membership:** 295,385. **Director-General:** Hon. James J. Davis. **Supreme Governor:** Hon. Matthew M. Neely. **Supreme Secretary:** Malcolm R. Giles. **Headquarters:** Moonshheart, Ill. The 1942 meeting is scheduled for Milwaukee, Wis., August 23-29.

Morale, Committee for National, established in July, 1940, with the basic ideal of studying conditions governing morale with the formulation of plans for morale defense. **Membership:** 100, in addition to a panel of scientific consultants and associate members. **Chairman:** Arthur Upham Pope. **Executive Secretary:** Victor H. Lawn. **Secretary:** Gregory Bateson. **Headquarters:** 285 Madison Avenue, New York City. Activities of 1941 consisted of publishing 50 Memoranda, which formed a part of a number of reports to the Government, *German Psychological Warfare*, a 160 page survey and bibliography, and several books. Numerous lectures and speeches were also given. See **PSYCHIATRY**.

Museums, American Association of, founded in 1906 to help museums solve their problems and increase their usefulness. **Membership:** 1,100. **President:** Clark Wasler. **Director:** Laurence Vail Coleman. **Headquarters:** Smithsonian Institution, Washington, D. C. The Association has two major functions—long range work that shapes broadly the course of museum development and direct and immediate usefulness to museums. The former program was advanced during 1941 through a study of college and university museums, which will result in a book to appear in January, 1942. This study was supported by the Carnegie Corporation of New York. The Corporation also financed another study, of company museums, that will be completed in 1942. The Association's program of direct service is being carried forward as usual through serial publications, consulting work, and meetings. The Association publishes *The Museum News*, a bi-weekly paper devoted to news of the museum world, which completed its 18th volume in 1941. The 36th annual meeting of the Association was held in Columbus, Ohio, in May, 1941.

Music. See organizations listed under *Advancement of Music and Composers*, also, the article on **MUSIC**.

Music Clubs, National Federation of, founded in 1898 for the purpose of "bringing into working relation with one another music clubs and other musical organizations and individuals directly or indirectly associated with musical activity for the purpose of aiding and encouraging musical education and developing and maintaining high musical standards throughout America." **Membership:** about 450,000 members in 5,000 clubs. **President:** Mrs. Guy Patterson Gannett. **Secretary:** Mrs. H. Carroll Day. **Publication and Business Offices:** 820 Wait Avenue, Ithaca, N.Y. The Federation embarked on an all-out defense program which not only embraced contributing talent and musical instruments for the entertainment of the armed forces, but participation in other defense activities. It awarded three scholarships in strings to the Berkshire Music Center, a vocalist, pianist, and violinist chosen in its Young Artists Contest; also the Edgar Sullman Kelley Junior Scholarship to a deserving young musician. It is also rebuilding the "Little Red House," Nathaniel Hawthorne's home at Tanglewood, as a summer studio for the Berkshire Music Center. The next convention will be held in Detroit, spring of 1943.

Music Council, Inc., National, organized in April, 1940, to provide a forum for the discussion of problems affecting national musical life, to speak with one voice for music in the United States, to provide for an interchange of musical information, to encourage the coordination of the efforts of musical organizations, to conduct surveys, to encourage the development of music, and to foster the highest ethical standards in it. **Membership:** 36 nationally

active associations. President Edwin Hughes Secretary. Franklin Dunham. Headquarters 338 West 89 Street, New York City Activities The National Music Council is represented on the Music Advisory Committee of the Division of Cultural Relations of the State Department and on the Subcommittee for Music of the Joint Army and Navy Committee for Welfare and Recreation in the War Department It is actively working to promote the use of music in the national defense and to further good-neighbor relations between the Latin-American republics and the United States It has given assistance to the Adjutant General's Office in matters relating to the use of music in the U. S. Army It publishes in its *Bulletin* digests of proposed national legislation affecting music, together with authoritative information on musical activities by the Federal Government It publishes an annual survey of the programs of the major symphony orchestras of the United States for the purpose of showing how American composers are represented It has established for the first time in America a National Committee for Opera in America It functions extensively as a musical clearing house and bureau of information The annual meeting is held in May and general sessions of the Council are called during each year as occasion demands

Music Critics' Circle, New York. See **MUSIC MUTUAL SAVINGS BANKS, NATIONAL ASSOCIATION OF**, founded in 1920 to represent mutual savings banks of the United States. Membership 12,000 officers and trustees President Andrew Mills, Jr Executive Secretary John W Sandstedt Headquarters 60 East 42 Street, New York City At the end of 1941 these banks were serving the greatest number of depositors and holding the greatest total of deposits in their history The annual conference of the Association will be held in New York, May 6, 7, 8, 1942

Nature Association, American, founded in 1922 to stimulate public interest in every phase of Nature and the out-of-doors, and to further the practical conservation of the great natural resources of America Membership 70,000 President Arthur Newton Pack Secretary Richard W. Westwood, Headquarters 1214 16th Street, N.W., Washington, D. C. Official organ of the Association is *Nature Magazine*

Netherland-America Foundation, Inc., of Holland House, founded in 1921 to deepen understanding and friendship between the Netherlands and the United States through educational and cultural channels Membership 125 President Thomas J Watson Secretary Harold de Wolf Fuller Headquarters 10 Rockefeller Plaza, New York City The annual meeting is held the third Tuesday in January. During 1941 the Foundation presented, in association with Holland House, several art exhibitions, a number of lectures, and three parties for refugee Dutch children

New Education Fellowship, founded in 1915 to promote the unity of teachers throughout the world interested in progressive education Membership about 20,000 President Dr Beatrice Envor, South Africa Chairman Dr Laurin Ziliacus, Finland Secretary Clare Soper, England Permanent quarters were destroyed by bombs, temporary quarters, BCM/NWED, London, W.C.1 Affairs of 1941 included the international conference at Ann Arbor, Mich., and three national conferences in England

Newspaper Publishers Association, American, founded in 1887 to foster and protect the interests of the newspaper publishing business Membership 566 President Walter M Dear Vice President Linwood I Noyes Secretary Norman Chandler Treasurer William G Chandler General Manager Cranston Williams Headquarters 370 Lexington Avenue, New York City The 1942 meeting will be held in New York City, April 21-23 See **NEWSPAPERS AND MAGAZINES**

No Foreign War Committee. See **UNITED STATES UNDER FOREIGN AFFAIRS**

Numismatic Society, The American, founded in 1858 for the collection, preservation, and study of coins, medals, and decorations of all countries Membership 417 President Dr Herbert E Ives Secretary and Curator Sydney P Noe Headquarters Museum at Broadway and 166th Street, New York City During 1941 there was an exhibition of the coinages of Latin America Meetings are held at the Museum on the second Saturday in January, April, and November

Nurses' Association, American, founded in 1896 to promote the professional and educational advancement of nurses, to elevate the standard of nursing education, and to establish and maintain a code of ethics among nurses Membership 178,017 President Julia C Stimson, RN Secretary Mrs. Mary A Hickey, RN Headquarters 1790 Broadway, New York City During 1941 the American Nurses' Association cooperated with the Federal Government in an inventory of nurses in the United States, and with all activities of the Nursing Council on National Defense. The next Biennial Convention will be held in Chicago in May, 1942, in conjunction with the National League of Nursing Education, and the National Organization for Public Health Nursing

Nutrition Conference, National. See **PUBLIC HEALTH SERVICE**

Nutrition Foundation, Inc., The, organized in December, 1941, to improve the diet, and thereby the health, of

the American people by education and research. Membership 16 (others soon to be added) Chairman of the Board Karl T Compton, President—Massachusetts Institute of Technology, Cambridge, Mass Treasurer. Morris Sayre Counsel Charles Wesley Dunn

Odd Fellows, Independent Order of, a fraternal organization founded in 1819 Membership 1,372,455. Grand Sire Hon Lynn J Irwin, Grand Secretary Edw G Ludvigsen Headquarters 16 West Chase Street, Baltimore, Md The 1942 meeting will be held in Chicago

Opinion Research Center, National. See separate article

Oriental Society, American, founded in 1842 for the promotion of research in oriental languages and cultures and the publication of books and papers Membership 843 President Prof. W Norman Brown Secretary Prof Ferris J Stephens, Yale University, New Haven, Conn The 1942 meeting will be held in Boston and Cambridge, Mass., April 7-10

Ornithologists' Union, The American, founded in 1883 for the advancement of ornithological science, publication of a journal and other works. Membership about 1,800 President James P Chapin Secretary Lawrence E Hicks, Ohio State University, Columbus, Ohio In 1941 the Brewster Award was granted to Donald R Dickey and A J van Rossem for their *Birds of Salvador* The 1942 meeting will be held in Philadelphia in October

Ort, Women's American, founded in 1927 and devoted to the creation of a new occupational existence for refugees and the masses of European Jews through trade-schools, farm colonies, and industrial workshops It is affiliated with American Ort Federation and World Ort Union, which have operated training centers in Europe for the past 60 years Membership about 5,000 President Mrs Edward B Gresser Headquarters 212 Fifth Avenue, New York City Events of 1941-42 include the Annual Membership Tea, Dec 16, 1941, at the Hotel Commodore in New York City, and the Annual Donor Luncheon on May 14, 1942, at the Hotel Astor, in New York City Chapter meetings are held monthly throughout cities of the United States

Pacific Relations, Institute of, founded in 1925 to promote scientific study and discussion of the problems and interrelations of the peoples of the Pacific area Composed of national councils in several countries bordering on or having interests in the Pacific Ocean. Membership 1,268 Chairman Prof Philip C Jenson, Secretary-General Edward C Carter Publications. *Pacific Affairs*, quarterly, *Inquiry into the Sino-Japanese War* (20 volumes now issued) and other volumes The chairman of the **American Council of the Institute** is Dr Ray Lyman Wilbur Secretary W W Lockwood Headquarters 129 East 52 Street, New York City Publications *Studies of the Pacific*, (research series), *Far Eastern Survey*, fortnightly, popular pamphlets Round table discussions and Far Eastern seminars for teachers were held in a number of cities throughout the nation in 1941 The Council inaugurated a radio program, *Spotlight on Asia*, to supply background information on Far Eastern questions

Painters and Sculptors, National Association of Women, listed under **Women**

Pan American Union. See separate article

Pan Pacific Union, founded in 1917, after ten years of preliminary work by the founder Alexander Hume Ford, for the promotion of better relations in Pacific countries through a fuller knowledge of each other Membership 500 President Charles E Frazier Executive Secretary A Y Satterthwaite Headquarters 1025 Union Trust Building, Honolulu, Hawaii Pan-Pacific or Balboa Day is observed annually on September 25

Parents and Teachers, The National Congress of (P.T.A.), founded in 1897 as the National Congress of Mothers, to promote the welfare of children and youth in home, school, church, and community Membership 2,480,188 President Mrs. William Kletzer Secretary Mrs. Charles D Center National Office, 600 S Michigan Boulevard, Chicago, Ill A three-year program of action on "The Child in His Community" is underway. A special war program was adopted in 1941 and translated into activity in all local associations. The program concentrated on the following seven areas of parent-teacher endeavor Conservation of human and material resources; registration and identification of children, health through nutrition and increased production of protective foods; education emergency, National Victory Book Campaign; prevention of epidemics through immunization; purchase of U.S Defense Savings Bonds and Stamps.

Peace, Commission to Study the Organization of. See under **League of Nations Association**

Peace and Freedom, Women's International League for (U.S. Section), founded in 1915 Membership 10,000. President Mrs Dorothy Medders Robinson Secretary Miss Dorothy Detzer Headquarters 1734 F Street N.W., Washington, D.C. Monthly publication: *Four Lights*

Peace Conference, National, founded in 1933 with a three-fold purpose as a council board, as a clearinghouse, as a publisher and program servicing agency to provide with objective, non-partisan information Membership 39 national organizations. Executive Director: Vernon Nash; Administrative Secretary Martha M. de Wilde. A conference on World Organization was held Mar. 17, 1941,

at the National Board Y.W.O.A. Building, New York City. A study project was sponsored on world organization, which included celebrating Armistice Day as World Government Day

Pediatrics, American Academy of. See MEDICINE AND SURGERY under *Chemotherapy*

P.E.N. Club, a world association of writers, founded in 1922 in the interests of literature, freedom of artistic expression, and international goodwill. The **American Center** has a membership of 200. President, Robert Nathan Secretary, Harrison Smith Headquarters: 229 East 79 Street, New York City. At the International Congress, held in London, Sept 10-13, 1941. Jules Romains, former International President, was supplanted by a Presidential Board consisting of H. G. Wells, Thornton Wilder, Dr Iiu Shih, and Denis Saurat

Pen Women, National League of American, founded in 1897 to promote the creative cultural arts of the pen, pencil, and brush Membership 3,000. President, Edna Knight Guschl Headquarters: 409 Willard Hotel, Washington, D C A Mid-Administration Congress was held in Miami, Fla., March, 1941. The next biennial convention will be held in Washington, D C in April, 1942.

People's Lobby, Inc., The, founded in 1931 (formerly the People's Reconstruction League, founded in 1920) to work for legislative and administrative measures in the interest of all the people Membership 1,875. President, Bishop Francis J. McConnell Executive Secretary, Benjamin Marsh, Headquarters: 1410 H Street, N.W., Washington, D C During 1941 the organization distributed about a quarter of a million reprints of its material from the *Congressional Record*. It sought to popularize profitless defense and a pay-as-you-go policy for national defense. The 1942 annual meeting was scheduled at the Town Hall Club, New York City, January 12

Petroleum Industry Council for National Defense. See PETROLEUM COORDINATOR

Petroleum Institute, American, founded in 1919 to afford a means of cooperation with the government, foster trade in petroleum products, promote the interests of the industry, the mutual improvement of its members, and the study of related arts and sciences Membership about 4,000. President, W. R. Boyd, Jr. Secretary, Lacey Walker Headquarters: 50 West 50 Street, New York City Meetings, 1942: 12th Mid-Year Meeting, Oklahoma City, Okla., 23d annual meeting, Chicago, Ill., November 9-13. See PETROLEUM

Phenomenological Society, International. See PHILOSOPHY

Philatelic Society, American, an organization of stamp collectors, founded in 1886 Membership 5,016. President, Rollin E. Flower Secretary, Dr H. A. Davis Headquarters: 3421 Colfax "A," Denver, Colo. The annual meeting, held in late summer, is scheduled for Cleveland, Ohio, 1942.

Philological Association, American, founded in 1869 for the advancement and diffusion of philological knowledge, incorporated, 1937 Membership 1,068. President, Lily Ross Taylor Secretary, J. R. Shero, Swarthmore College, Swarthmore, Pa. The 1942 meeting will be held in Cincinnati, Ohio, December 28-30

Philosophical Association, The American, founded in 1900 for the promotion of the study and teaching of philosophy in all branches Membership 801. President and Chairman of the Eastern Division, Grace A. de Laguna, President of the Western Division, R. A. Tansoff, President of the Pacific Division, E. E. Erickson, Secretary of the Federated Divisions, Cornelius Kruse, Wesleyan University, Middletown, Conn. An Inter-American Congress of Philosophy is planned for 1942. See PHILOLOGY, CLASSICAL; PHILOSOPHY

Physical Society, American, founded in 1899 for the advancement and diffusion of knowledge of physics Membership 4,000. President, Professor P. W. Bridgman, Secretary, Dr K. K. Darrow Headquarters: Columbia University, New York City. The annual meeting will convene, December, 1942.

Physicians, American College of, founded in 1915 as an organization of qualified specialists in Internal Medicine and allied specialties to maintain and advance the highest possible standards in medical education, medical practice, and clinical research, to perpetuate the history and best traditions of medicine and medical ethics, and to maintain both the dignity and the efficiency of Internal Medicine in its relation to public welfare. Membership 4,662. Masters, 3,455. Fellows, 1,203. Associates, 4,662. President, Dr. Roger I. Lee, Boston, Mass., President-Elect, Dr. James E. Pauslin, Atlanta, Ga.; Executive Secretary, Mr. E. R. Loveland, Headquarters: 4200 Pine Street, Philadelphia, Pa. The 25th annual session was held in Boston, Mass., Apr. 21-25, 1941. The John Phillips Memorial Medal for achievement in Internal Medicine was awarded to Dr. William Christopher Stadie of Philadelphia, Pa. Three additional Research Fellowships, in the amount of \$1,800.00 each, were awarded by the College, and a more extended program of intensive post-graduate courses has been conducted in various medical centers. Numerous regional meetings of College members have been held in various States. The College became an active member of the Gorgas Memorial Institute, the U.S. Pharmacopoeial Convention, and the National Research

Council. In connection with the latter, special appropriations were made by the College for the classification of physicians for military service and to a research project on the adaptation of bovine plasma for human use in case of national emergency. The 26th annual session will be held in St. Paul, Minn., Apr. 20-24, 1942.

Planned Parenthood. See BIRTH CONTROL.

Planning and Civic Association, American, formed in 1935 by a merger of the American Civic Association (1904) and the National Conference on City Planning (1909). It promotes public understanding and support of planning for the best use of land, water, and other natural resources, higher ideals of civic life, and safeguarding of natural wonders, scenic possessions, and recreation facilities. Membership and Subscriptions: 2,000. President, Horace M. Albright, Executive Secretary, Harlan James Headquarters: 901 Union Trust Building, Washington, D C

Polish National Alliance of the U.S. of N.A., a fraternal society founded in 1880. Membership 300,000. President, J. K. Rozmarek. General Secretary, A. S. Szczerbowski Headquarters: 1514-20 W. Division Street, Chicago, Ill. A convention is held once every four years, and the subsidiary lodges, which number about 2,000, meet monthly.

Political and Social Science, The American Academy of, founded in 1899 to provide a forum for the discussion of the great political, social, and industrial problems confronting the world. Membership 8,000 to 9,000. President, Dr. Ernest Minor Patterson Secretary, Dr. J. P. Lichtenberger Headquarters: 3457 Walnut Street, Philadelphia. A bi-monthly, *The Annals*, is published. The 1942 annual meeting is scheduled for Philadelphia, April 10-11.

Political Science, Academy of, an international learned society founded in 1880, incorporated in 1910. Membership 6,764. President, Wesley C. Mitchell. Editor of Publications, Sam H. Lewisohn Secretary, John A. Krout, Headquarters: Fayerweather Hall, Columbia University, New York City. At the semi-annual meeting, Apr. 16, 1941, in New York City, "America Faces the Future" was the paramount issue discussed. At the 61st annual meeting on November 12 the topic considered was "American Industry in a War of Machines."

Political Science Association, American, founded in 1903 to foster scholarly interest in the scientific study and improvement of politics and public law, administration, and diplomacy. Membership 3,108. President, William Anderson Secretary, Kenneth Colegrove Headquarters: 105 Harris Hall, Northwestern University, Evanston, Ill. The Association maintains a Personnel Service indicating the records of young scholars available for appointment. The 1942 annual meeting will be held in Washington, D.C., December 28-30.

Prevention of Blindness, National Society for the, founded in 1915, concerned with the control and, where possible, the elimination of the causes of blindness, impaired vision, and eyestrain—not with activities on behalf of those already blind. Members and Donors 19,500. President, Mason H. Bigelow. Executive Director, Mrs. Eleanor Brown Merrill Secretary, Miss Regina E. Schneider Headquarters: 1790 Broadway, New York City.

Prevention of Cruelty to Animals, The American Society for the (A.S.P.C.A.), founded in 1866. President, Alexander S. Webb Secretary, Richard Welling, Executive Vice-President, Sydney A. Coleman, Headquarters: 50 Madison Avenue, New York City. The annual meeting was held Jan. 2, 1941.

Prevention of War, National Council for, founded in 1921 as a progressive world organization devoted to worldwide reduction of armaments by international agreement, and worldwide education for peace. Membership 19 national organizations. Executive Secretary, Frederick J. Libby, Office Secretary, Mrs. Gladys K. G. Mackenzie, Treasurer, T. Janney Brown Headquarters: 532 17th Street, N.W., Washington, D.C. The 1942 annual meeting is slated for Washington, D.C. in October.

Prison Association, American, founded in 1870 to improve laws, law enforcement, and penal and correctional institutions, to study the causes of crime, and to care for and provide employment for paroled and discharged prisoners and probationers. The Association maintains a free clearinghouse of information. Membership 890. President, G. Howland Shaw, General Secretary, E. R. Cass Headquarters: 135 East 15 Street, New York City. The Annual Congress, which may be attended by anyone who wishes to profit thereby, will be held in Asheville, N.C., Oct. 19-23, 1942.

Progressive Education Association, incorporated in 1931 to develop and promote progressive principles of education through field conferences, a Service Center for members, preparation and distribution of educational materials, and publication of two journals, *Progressive Education* and *Frontiers of Democracy*. Membership about 10,000. President, Carleton Washburne, Director, Frederick L. Redefer Headquarters: 221 West 57 Street, New York City. See EDUCATION

Protection of Childhood, American International Institute for the. See CHILDREN'S BUREAU

Protection of Foreign Born, American Committee for, founded in 1933 to promote better relations between native and foreign born by education; to combat discrimina-

tion on the ground of race, nationality, or noncitizenship; to encourage and facilitate naturalization; and to prevent the destruction of American families by deportation. It is not a membership organization, but has 400 annual contributors. Chairman, Hugh DeLacy. Headquarters, 79 Fifth Avenue, New York City. The 1942 Conference will be held at Cleveland, Ohio, in April, 1942.

Psychiatric Association, American, founded in 1844 to further the study of mental diseases; to further psychiatric hospitals, education, and research, and to apply psychiatric knowledge to other branches of medicine, to other associations, and public welfare. Membership, 2,667. President: Dr. J. K. Hall, Executive Assistant: Austin M. Davies. Headquarters, 9 Rockefeller Plaza, New York City. Activities in 1941 included the compilation of military information and data and the preparation of a biographical directory of members of the Association. The 1942 meeting was scheduled for Boston, Mass., May 18-22.

Psychological Association, American, founded in 1892 to advance psychology as a science. Membership, 2,937. President, Calvin P. Stone. Secretary, Willard C. Olson. Headquarters, University of Michigan, Ann Arbor, Mich. The 1942 meeting is scheduled September 2-5 at Harvard University.

Psychology, American Association for Applied, listed under *Applied*.

Public Affairs, Institute of, founded in 1927 to explore by formal addresses and open forum discussions important public problems. Membership, 5,000 yearly, 36,000 total. Director, Hardy Cross. Dillard, Secretary, Anne Cowle Yates. Headquarters, University of Virginia, Charlottesville, Va. Students from colleges in all sections of the East participated in the 1941 sessions. Approximately 100 invited authorities from government, industry, labor, and the foreign service participate, and all addresses and discussions are made available to the public. The 1941 sessions were devoted to political and economic factors bearing on the relation of the United States to the war and trends in the future. The 1942 sessions will be held during the summer.

Public Health Association, American, founded in 1872 to promote and protect the public health. Membership, 7,100. President: Dr. John L. Rice. Executive Secretary, Dr. Reginald M. Atwater. Headquarters, 1790 Broadway, New York City. The Association undertook during 1941 a study on merit systems in state health departments, and published reports on Standard Methods of Dairy Products, on Diagnostic Procedures and Reagents, on Recommended Practice for Design, Equipment and Operation of Swimming Pools and Other Public Bathing Places, on professional qualifications of several types of public health workers. A supplementary statement on Health Measures in War-Time was issued as part of the Association's Official Declaration of Attitude on Desirable Standard Minimum Functions and Suitable Organization of Health Activities. The Sedgwick Memorial Medal was awarded to Dr. Charles Armstrong in a City Health Conservation Contest, financed by the Metropolitan Life Insurance Company, the National Health Honor Roll for the year 1940 included Baltimore, Md., Evanston, Ill., Green-wood, Conn.; Hackensack, N. J.; Hartford, Conn.; Honolulu, Hawaii; Madison Wis., Memphis, Tenn.; Newton, Mass.; Pasadena, Calif. A Rural Health Contest was conducted also, financed by the Kellogg Foundation. The 71st annual meeting will be held at St. Louis, October 27-30, 1942. The official publication of the American Public Health Association is the *American Journal of Public Health*, now in its 32nd volume.

Public Housing Conference, National, an association of individuals and organizations, founded in 1931 to promote slum clearance and low rent housing through an established Federal-State-Local service. Membership, 1,000. President: Mary K. Simkhovitch. Headquarters, 122 East 22 Street, New York City. The 1941 program included meetings, publications, housing tours, and the use of visual material and the radio to support a campaign against slums. The 1942 annual meeting is scheduled for Washington, D. C., February, 6.

Queen Wilhelmina Fund, Inc., founded in May, 1940, to distribute medical aid, food, and clothing to and otherwise promote the well-being of the population of the Netherlands and its refugees and stranded citizens in other countries. Membership, 13. Headquarters, 10 Rockefeller Plaza, New York City. The 1942 meeting will be held in New York City.

Radio, National Committee on Education by, listed under *Education*.

Radio Manufacturers Association. See *RADIO* under *Television*.

Railroads, Association of American, founded in 1934 to promote trade and commerce in the public interest, further improve railroad service, and maintain the integrity and credit of the railroad industry where concert of policy and action are required. Membership, 138 railroad systems and 180 associate members. President, J. J. Felley. Secretary-Treasurer, H. J. Forster. Headquarters, Transportation Building, Washington, D. C. See *TRANSPORTATION DIVISION*.

Recreation Association, National, founded in 1906 with the following objectives: That every child in America

shall have a chance to play; that everybody in America young or old, shall have an opportunity to find the best and most satisfying use of leisure time. Membership: 9,481. President, Howard Braucher. Headquarters: 815 Fourth Avenue, New York City. The many services of the Association were available in 1941 to help with the normal recreation problems of communities throughout the United States as well as to help with the emergency recreation problems existing in communities near defense camps and in industrial defense centers. An outstanding event of the year was the 26th National Recreation Congress held in Baltimore, September 29 to October 3, which opened with a special defense recreation conference.

Red Cross, American National. See separate article.

Research Council, National, founded in 1916 to "promote research in the mathematical, physical, and biological sciences, and in the application of these sciences to engineering, agriculture, medicine, and other useful arts, with the object of increasing knowledge, of strengthening the national defense, and of contributing in other ways to the public welfare." Membership: about 240, composed in majority of representatives of 85 scientific and technical societies, in addition to about 1,200 members of committees of the Council and its Divisions. Chairman: Ross G. Harrison. Executive Secretary, Albert L. Barrows. Headquarters, 2101 Constitution Avenue, Washington, D. C. The Council conducts a wide range of research activities in the medical and natural sciences under the sponsorship or supervision of specially appointed committees. Series of post doctorate fellowships are administered in the medical and in the natural sciences. A number of publications resulting from work of the Council's Committees are issued each year, either commercially or in the *Bulletin* or *Reprint and Circular Series* of the Council. As an operating agency of the National Academy of Sciences, the Council has been called upon frequently during the past year by agencies of the Government for advice and assistance in connection with research relating to the national defense. See *EDUCATION* under *War Demand*, *PSYCHOLOGY*.

Research Council of Canada, National, founded in 1916 to have charge of all matters affecting scientific and industrial research in Canada which may be assigned to it by the Committee of the Privy Council on Scientific and Industrial Research. Membership, 15. President, Lt.-Gen. A. G. L. McNaughton (recalled to active duty). Acting President: C. J. Mackenzie. Secretary, S. P. Eagleson. Headquarters, National Research Building, Ottawa, Can. The council's staff of 700 in October, 1941, was grouped in laboratory divisions of biology and agriculture, chemistry, mechanical engineering, physics and electrical engineering, and a section on research plans which includes a scientific library and technical information service. New aeronautical laboratories built outside Ottawa were occupied during the year. Practically all activities were directed to war research for Navy, Army and Air Force. The Council is official research station for the Royal Canadian Navy. Prototypes of important tactical weapons designed by the Council are now in successful operational use. Outside activities included a research program of more than 70 war projects in universities; the granting of 64 scholarships for postgraduate research, and the award of 145 grants in aid to responsible workers for special investigations.

Review of Motion Pictures, Inc., National Board of. An organization founded in 1909 to encourage the best uses of the motion picture recreationally, educationally, and artistically. Membership: 500. The President is Quincy Howe, Executive Director, James Shelley Hamilton. Headquarters: 70 Fifth Avenue, New York City. The 16th annual announcement of the Board's choices of the best films of the year was made on Dec. 22, 1941, as follows: Best film of the year, *Citizen Kane*; best foreign-language film, *Pepe le Moko*; best documentary film, *Target for Tonight*, with honorable mention given to *The Forgotten Village*. The ten best American films selected, in order of preference, were *Citizen Kane*, *How Green Was My Valley*, *The Little Foxes*, *The Stars Look Down*, *Dumbo*, *High Sierra*, *Here Comes Mr. Jordan*, *Tom, Dick and Harry*, *The Road to Zanzibar*, *The Lady Eve*.

Ring of Freedom, Inc., founded in May, 1941, to build and edify the democracy of tomorrow, and to defend the democracy of today. Membership, 6,000. President: Dorothy Thompson. Chairman of the Board of Guardians: Frank Kingdon. Secretary, Meyer W. Weisgal. Headquarters: 51 East 42 Street, New York City. The distinctive event of 1941 was a mass meeting at Carnegie Hall, New York City, held jointly with the *New York Post*.

Rosicrucian Order, The (AMOEC), a non-sectarian fraternity. Membership, 60,000. Imperator and President, Ralph M. Lewis. Secretary-Treasurer, Cecil A. Poole. Headquarters, Rosicrucian Park, San Jose, Calif. During 1941 the facilities of the organization were made available for national defense, and special membership privileges were extended to members in the armed service and in various parts of the British Empire. The 1942 International Convention is to be held at headquarters July 12-18.

Rotary International, a world-wide organization which serves as a clearing house of ideas and experiences for all Rotary clubs. A Rotary club is a group of represen-

tative men in a community, one from each business or profession, who gather to further the ideal of service in business and community life. The first Rotary club was organized 1905. There are now 5,082 Rotary clubs in more than 50 geographical regions of the world with a membership in excess of 211,000. Secretary: Chesley R. Perry. Headquarters, Chicago, Ill.; additional offices in London, England; Zurich, Switzerland; and Bombay, India. During 1941, community "Institutes of International Understanding" were sponsored by 200 Rotary clubs in the U.S.A., and 14 weekly radio programs called "The Americas Speak," were presented by Rotary clubs of Latin America as a contribution to friendship and understanding. In addition to usual activities, Rotary clubs throughout the world engaged in the alleviation of war suffering and in emergency national service activities. The 32nd annual convention of Rotary International was held in Denver, Colo., June 15-20, 1941. The official magazine is *The Rotarian* which has a Spanish edition, *Revista Rotaria*. In addition there are 15 regional Rotary magazines published throughout the world in 12 languages. The 1942 convention of Rotary International will be held in Toronto, Canada, June 21-25.

Royal Geographical Society, listed under *Geographical*. **Royal Institution of Great Britain**, founded in 1799 for the promotion, diffusion, and extension of science and useful knowledge. Membership, about 900. President, The Right Hon. Lord Eustace Percy. Secretary: Maj. Charles E. S. Phillips. Headquarters: 21 Albemarle Street, London, W. 1.

Royal Society, founded in 1662 for improving natural knowledge. Membership: 454 Fellows and 47 Foreign Members. President, Sir Henry Dale. Treasurer, Mr. T. R. Merton. Secretaries, Professor A. V. Hill and Professor A. C. G. Egerton. Foreign Secretary: Sir Henry Tizard. Headquarters: Burlington House, London, W. 1. Awards were made during 1941 as follows: Copley Medal to Thomas Lewis, Royal Medals to E. A. Milne and E. L. Kennaway, Davy Medal to H. D. Dakin, and Hughes Medal to N. F. Mott. The Ferrier Lecture was delivered by Professor F. O. Bartlett on 29 May 1941; the Bakeman Lecture by Professor P. A. M. Dirac on June 19, 1941, and the Croonian Lecture by Professor W. W. C. Topley on July 17, 1941. Seven Ordinary Meetings were held during the year. The Anniversary Meeting was held on December 1, 1941.

Russian War Relief, Inc., founded in September, 1941, to furnish aid and assistance for relief of human suffering in the U.S.S.R. and among refugees from the U.S.S.R. Membership: 23 Board of Directors. President of the Board Edward C. Carter. Secretary: Harriet Moore. Headquarters: 535 Fifth Avenue, New York City. The important happening of 1941 was the launching of the campaign at Madison Square Garden, New York City, October 27.

Safety Council, National, founded in 1913 to bring about understanding of the steps necessary to prevent accidents of all kinds and to furnish its members with printed material and information for use in conducting accident prevention work. Membership, 5,375, mainly companies and associations. President, Col. John Stulwell. Managing Director W. H. Cameron. Headquarters: 20 N. Wacker Drive, Chicago, Ill. The prevention of accidents as an aid to defense has been stressed by the Council during 1940 and 1941. On Aug. 18, 1941, President Roosevelt issued a proclamation calling attention to the increased accidental death rates. Declaring that, "Accidents hinder national defense," he called upon the National Safety Council to mobilize its nation-wide resources in leading a concerted campaign against accidents, and upon every citizen to enlist in this campaign. The Council called together 130 national associations to cooperate in this campaign. It intensified its own activities in traffic and industrial safety. Special publications, films, and posters were produced and special studies made on several aspects of traffic and industrial safety as they are affected by and as they affect the war effort. The Council published six magazines and hundreds of studies on accident prevention methods. It distributed 5½ million safety posters in 1941 for use in industry, in schools and public places. It conducted many national safety contests among various groups and issued hundreds of awards. The National Safety Congress, attended by several thousands of delegates, meets annually in October. The 31st annual Congress will be held in Chicago, Oct. 5-9, 1942. See ACCIDENTS.

Savings and Loan League, United States, a trade organization founded in 1892 by the savings, building, and loan associations of the United States, whose assets total \$6,000,000,000 and whose chief business is the lending of money to finance home ownership. Membership: 3,700 associations and 47 affiliated State leagues. President: Fernor S. Cannon. Secretary: H. F. Cellarius. Headquarters: 221 N. La Salle Street, Chicago, Ill. At the annual convention in Miami, December 1-5, 1941, the Associations urged all component units to participate in Defense Bond distribution, stand 100 per cent back of the nation's foreign policy, and urged preference for home-owners in building materials priorities. The League published the 11th of its series of year books, *Savings and Loan Annals 1940*. The year 1941 represented the

second billion-dollar lending year for the Association since 1930.

Scandinavian Foundation, American, founded in 1911 to assist cultural relations between America and the Scandinavian countries. President: Henry Goddard Leach. Headquarters, 116 East 64 Street, New York City.

Science, American and British Associations for the Advancement of, listed under *Advancement*.

Sculpture Society, National, founded in 1893 to advance the knowledge, creation, and appreciation of good sculpture by annual exhibitions and other means. Membership, 280. President, Paul Manship. Secretary Mrs. Margaret French Crosson. Headquarters, 115 East 40 Street, New York City. The Exhibition of Enlarged Photographs was held at The Architectural League, May 13-24, 1941, and later sent out as a Traveling Exhibition. The Annual Bas Relief Exhibition was also held at the League from May 13 to 24, 1941. A prize was awarded to Walker Hancock for his winning design. The medal of Honor was awarded posthumously to Mr. Dwight James Baum.

Seeing Eye, The, a philanthropic organization founded in 1929 to furnish dogs as guides to blind persons. Membership: 14,413. President: Henry A. Colgate. Treasurer: Herman J. Cook. Mrs. Harrison Eustis, founder, is the Honorary President. The organization maintains a school at Morristown, N.J. where dogs are trained, separately for three months and with their blind masters for a period of one month. During the fiscal year ending Sept. 30, 1940, 143 blind men and women were graduated with their educated dogs, 448 applicants were investigated, and 130 were accepted for classes during the succeeding year. Approximately 625 persons now use Seeing Eye dogs. The maximum cost to the blind person is \$150 although the actual cost of training the dog is many times that amount.

Silver Suits. See UNITED STATES under *Unity*.

Small Business Men's Association, Inc., National, organized in 1937 as a means of giving small business men a voice in national affairs. President: Monroe Shakespeare. Vice President: Wilbur Jones. Secretary: James S. Westbrook. Headquarters: Akron, Ohio. The 1941 meeting was held in May at the Palmer House, Chicago.

Social Democratic Federation. See SOCIALISM.

Social Hygiene Association, American, formed in 1914 to combat syphilis and gonorrhea, to fight prostitution and other unwholesome conditions, to promote sound sex education and training for marriage and parenthood, and to protect and improve the American family as the basic social institution. Membership, 147 organizations, approximately 10,000 individuals. President: Dr. Ray Lyman Wilbur. Executive Director: Dr. Walter Clarke. Headquarters: 1790 Broadway, New York City. Services include advice and consultation, surveys, distribution of literature, films, and other materials. During 1941 the 5th National Social Hygiene Day was sponsored with more than 5,000 meetings throughout the country. The William Freeman Snow medal for distinguished service in the social hygiene field was presented to Mrs. Sybil Neville-Rolfe, London. Three new sound films, *In Defense of the Nation*, *Plain Facts*, *With These Weapons*, were produced and distributed. The Association prepared a *Summary of State Legislation Requiring Prenatal and Prenatal Examination Laws for Syphilis*, *Digest of State and Federal Laws Dealing with Sex Offenses*, and revised the *Digest of Laws and Regulations Relating to the prevention and control of Syphilis and Gonorrhea*. Regional conferences are scheduled for Boston, Cincinnati, Oklahoma City, and New York in February, 1942.

Social Science, Henry George School of, listed under *Henry George*.

Social Sciences, National Institute of, incorporated in 1899 to reward distinguished services rendered to humanity. Membership, 550. Secretary: Miss Rosina Hahn. Headquarters: 271 Madison Avenue, New York City. At the annual dinner, May 15, 1941, in New York City, gold medals were awarded to Hon. Norman H. Davis, Mrs. J. Borden Harriman, and Hon. Alfred E. Smith. The 1942 annual meeting was scheduled in New York City, February 6th.

Social Security, American Association for, founded in 1927 for the promotion of social security and social insurance in the United States. Membership: 4,000. President: Bishop Francis J. McConnell. Executive Secretary: Abraham Epstein. Headquarters: 22 East 17 Street, New York City. During 1941 the Association continued its fight for an improved unemployment insurance system and the inauguration of health insurance in the different States. It led the fight against the Treasury attempt to use social security taxes for defense purposes, and organized a committee of leading students and administrators of social security to restudy the problems of social security in the post-war economy. The 1942 National Conference on Social Security is to be held in April in New York City.

Social Work, National Conference of, founded in 1873 to facilitate discussion of the problems and methods of practical human improvement, to increase the efficiency of organizations devoted to this cause, and to disseminate information. It does not formulate platforms. Membership: 6,000. President: Shelby M. Harrison. General Secretary: Howard R. Knight. Headquarters: 82 N. High

Street, Columbus, Ohio The 1942 meeting will be held in New Orleans, La. See BIRTH CONTROL

Social Workers, American Association of, founded in 1921 to formulate and establish standards of personnel and of conditions under which social work is practiced, to disseminate information concerning the profession, and to conduct investigations which contribute to an understanding of social welfare needs. Membership, 11,250. President Wayne McMillen. Executive Secretary: Walter West. Headquarters, 180 East 22 Street, New York City. A survey of relief conditions in the United States was published in May, 1941. The 1942 Delegate Conference will be held in New Orleans in May.

Sociological Society, The American, founded in 1905 to encourage sociological research, discussion, teaching, and publication. Membership, 1,032. President Dwight Sanderson. Secretary, Conrad Tæuber. Headquarters, U.S. Department of Agriculture, Washington, D.C. The Society issues the bi-monthly journal, the *American Sociological Review*.

Special Libraries Association, organized in 1909, incorporated in 1928, to serve all those who are aware of the ever-increasing importance of knowing what information is available and how to secure it, to act as a clearinghouse of information, and to further professional progress. Membership, 2,600. President, Laura A. Woodward. Secretary, Mrs. Kathleen B. Stebbins. Headquarters, 31 East 10 Street, New York City. Publications of 1941 were: *Trade-names Index; World War II, A Bibliography; Creation and Development of an Insurance Library; Directory of Microfilm Sources*, and *Special Library Resources*, a survey of the data in 765 libraries throughout the United States and Canada.

Standards Association, American. See HEATING AND VENTILATING, PHOTOGRAPHY under *Physical Measurements*

State Governments, The Council of, founded in 1925 by the States to encourage cooperation among them, to make State government more effective, and to serve as a clearinghouse of information for public officials. It is also the secretariat of the Governors' Conference, the American Legislators' Association, the National Association of Attorneys General, the National Association of Secretaries of State, and the National Conference of Commissioners on Uniform State Laws. Membership, 44 States. President, Gov. Harold E. Stassen. Executive Director, Frank Bane. Headquarters, 1313 East 60 Street, Chicago, Ill. The Council participates in the work of the International Board of Inquiry for Great Lakes Fisheries, set up Feb. 29, 1940, and cooperates with various national defense agencies and with State Councils of Defense. The Fifth General Assembly met in Washington, Jan. 21-24, 1941.

Statistical Association, American, founded in 1839 as a scientific and educational organization of persons seriously interested in the application of statistical methods to practical problems, the development of more useful methods, and the improvement of basic statistical data. Membership, 3,150. President, Dr. Alfred J. Lotka. Secretary, R. L. Funkhouser. Headquarters, 1629 K Street, N.W., Washington, D.C.

Student Federation of America, National, founded in 1925 to achieve a spirit of cooperation among students in the United States to give consideration to questions affecting student interests, to develop and vigorously express an intelligent student opinion on questions of national and international importance, to further an enduring peace, and to create and endeavor to execute a program for the youth of America on vital problems. The Federation acts independently of any political party or religious sect. Membership, Student councils of about 125 colleges and universities. President, Elizabeth Robertson. Headquarters, 1410 H Street, N.W., Washington, D.C. The 17th annual congress was held December 27-31, 1941, at the University of Minnesota, Minneapolis.

Student Service, International (I.S.S.), founded in 1920 to provide the student with opportunity for action without losing sight of his responsibility for objective and thorough study. It is not a membership organization. (Chairman of the Executive Committee, Alvin Johnson. General Secretary, Joseph P. Lash. Headquarters, 8 West 40 Street, New York City. In addition to its traditional work of aiding student refugees, the I.S.S. services include the organization of intercollegiate conferences, a Washington Student Service Bureau, a publication, *Threshold*, a Summer Student Leadership Institute at Campobello, and voluntary work camps. Meetings scheduled for 1942 include conferences at the universities of North Carolina and Washington, and at Wellesley College.)

Student Union, American, founded in 1935 to "Make the Campus a Fortress of Democracy." Membership, 17,000. Chairman: Richard Bancroft. Executive Secretary, Herbert Witt. Headquarters, 230 Fifth Avenue, New York City. Events of 1941 included two summer institutes, a meeting series on "The Axis Threat to Education" sponsored by chapters in fifty colleges, and the Seventh National Convention. The Eighth National Convention will be held Christmas week, 1942.

Surgeons, American College of, founded by surgeons of the United States and Canada in 1913 to advance the

science and the ethical and competent practice of surgery, to establish hospital standards, to engage in research, to aid in better instruction of doctors, to formulate standards of medicine, and to improve all adverse conditions surrounding the ill and injured wherever found. Membership, 13,300. President, W. Edward Galle. Secretary, Frederic A. Besley. Chairman of the Board of Regents, Irvin Abell. Headquarters, 40 East Erie Street, Chicago, Ill. Three sectional meetings were held in 1941 in addition to the annual meeting and clinical congress at Boston, November 3-7. Work was carried on by the following departments: Hospital Standardization, Clinical Research, Library and Department of Literary Research, Medical Motion Pictures, and Graduate Training for Surgery. The award for Prize Winning Case Histories was granted to Dr. John Roseberry Orndorff of Chicago.

Surgical Association, American. See MEDICINE AND SURGERY under *Advances in Surgery*

Swedish Historical Museum, American, established in 1926 to promote good citizenship and patriotic purposes among citizens of Swedish origin, and preserve their contributions to American life. Membership, 3,000. Chairman, William L. Butt. Executive Secretary, Elizabeth Z. Swenson. Headquarters, 19th Street and Pattison, Philadelphia. Events of 1941 included lectures by Gunhild Teigen and Tage Palm, exhibitions of William E. Willner, Carl Sandburg, Baron Axel Kinckowstrom, Wiwen Nilsson, Fingal Rosenquist, and Carl Lindborg. In April, 1941, the Museum assumed custody of "The House on Queen Christina's Land-Grant," built early in 1700.

Temperance Groups. See under *Alcoholism, Anti-Saloon League, Woman's Christian Temperance Union*

Testing Materials, American Society for, a technical Society founded in 1898 to promote knowledge of the materials of engineering and to standardize specifications and the methods of testing. Membership, 4,514. President, G. E. F. Lundell. Secretary-Treasurer, C. L. Warwick. Headquarters, 260 S. Broad Street, Philadelphia, Pa. During 1941 the Fifteenth Award of the Charles B. Dudley Medal was made to C. W. MacGregor for his paper on "The Tension Test" presented at the 1940 Annual Meeting. The Second Sanford E. Thompson Award was made to W. T. Thomson for his paper on "A Method of Measuring Thermal Diffusivity and Conductivity of Stone and Concrete." In 1942 the Spring Meeting and Committee Week will be held in Cleveland, Ohio, March 2-6, and the Annual Meeting in Atlantic City, N.J., June 22-26.

Tomorrow's Children. See BIRTH CONTROL

Training Schools, National Association of. See JUVENILE DELINQUENCY

Tropical Agriculture, Institute of. See COORDINATOR OF INTER-AMERICAN AFFAIRS.

Trucking Association, American. See RAILWAYS

Tuberculosis Association, National, founded in 1904 for the study and prevention of tuberculosis. Membership, over 1,600. President, Dr. Bruce H. Douglas. Secretary, Dr. Charles J. Hatfield. Headquarters, 1790 Broadway, New York City. In 1941 the Trudeau Medal was awarded to Dr. John Alexander. The 1942 annual meeting is scheduled to be held in Philadelphia, May 6-9.

United China Relief, Inc., organized in February, 1941, to raise funds for relief and rehabilitation in China. Chairman, James G. Blaine. Executive Director, B. A. Grunsell. Headquarters, 1790 Broadway, New York City. United China Relief is a coordination of the fund-raising activities of eight Participating Agencies: American Bureau for Medical Aid to China, Associated Boards for Christian Colleges in China, American Committee for Chinese War Orphans, China Aid Council, American Friends Service Committee, China Emergency Relief Committee, Church Committee for China Relief, Indusco (American Committee in Aid of Chinese Industrial Cooperatives). See ROMAN CATHOLIC CHURCH

United Service Organizations for National Defense, Inc. (U.S.O.), founded February, 1941, "to serve the spiritual, recreational, welfare, and social needs of the men and women in the armed forces and defense industries of the United States." Membership, 6 member agencies, 60 corporate members (10 from each agency). Chairman of the Board, Walter Hoving. President, Harper Sibley. Secretary, Randall J. LeBoeuf, Jr. Headquarters, 350 Fifth Avenue, New York City. With the incorporation of the organization in the State of New York, Feb. 4, 1941, and the National Campaign instituted, June 3-July 4, operations were begun shortly thereafter, with 536 total operations of which 245 were U.S.O. clubs. Personnel at the end of the year numbered 960. The 1942 meeting of members is scheduled for New York City.

Unity of Science, International Congress for the. See PHILOSOPHY.

University Professors, American Association of, a professional organization of college and university teachers and investigators, founded in 1915 to facilitate more effective cooperation among its members, to promote the interests of higher education and research, and to increase the usefulness and advance the standards and ideals of the profession. The nature of its work is indicated by the titles of the committees, which include Academic Freedom and Tenure, Freedom of Speech, International Relations, Edu-

ational Standards, Author-Publisher Contracts, Professional Ethics, Relation of Junior Colleges to Higher Education, Cooperation with Latin-American Universities, Pensions and Insurance, Preparation and Qualification of Teachers, Encouragement of University Research, Library Service, and the Economic Welfare of the Profession. Membership: about 16,000 President W. T. Laprade. General Secretary, Ralph E. Himstead Headquarters 1155 Sixteenth Street, N.W., Washington, D.C. An annual meeting is held, usually in the last week of December.

Veterans of Foreign Wars of the United States (V.F.W.), founded in 1899 to perpetuate the comradeship formed among men who have borne arms in America's wars and campaigns on foreign soil or in hostile waters, and to continue their patriotic service in behalf of the nations as a whole, of children, and particularly of disabled veterans. Membership about 250,000. Commander-in-Chief: Max Singer Headquarters Broadway at 84th Street, Kansas City, Mo. Increasing emphasis on personal and organization participation in America's national defense program, an all-time high membership record, and sponsorship of a monthly series of programs on the theme "Speak Up for Democracy" over a nationwide network of nearly 450 local radio stations, were among the highlights of the 1940-41 program. Approximately 400,000 members of the V.F.W. and its Ladies Auxiliary, affiliated with 6,000 local units, supported the national program in their respective communities in every state, the District of Columbia, Alaska, the Canal Zone, Philippine Islands, and the Territory of Hawaii. The year culminated in the 42nd annual national encampment Aug 24-29, 1941, at Philadelphia—the largest convention of the V.F.W. and its Auxiliary, since its organization in 1899. "Unity for Victory" was the theme adopted for the ensuing year. A resolution was adopted defining the attitude of the overseas veterans' organization toward the foreign policy of the United States government. In view of the world situation the V.F.W. went on record as "wholeheartedly endorsing and supporting those measures taken by the Government of the United States of America to defend and perpetuate the American way of life from any and all aggressors." At 11 00 a.m. on the 11th day of each month, commemorating the World War Armistice of Nov 11, 1918, V.F.W.-sponsored speakers present a 15 minute radio program designed to tell the American people what democracy is, and what they can do personally to defend it. As of Oct 11, 1941, the program was being broadcast monthly over a nationwide network of 434 stations. Other programs included the sponsorship of the sixth annual high school Americanism essay contest in which approximately 150,000 girls and boys throughout the country were entered. Legislative achievements of the year sponsored by the V.F.W. included Public Law No 775, which provides for the entire personnel of the Naval Reserve or Marine Corps Reserve pensions and other benefits as now provided for the personnel of the regular Navy or Marine Corps, in case of disability or death in line of duty, an amendment to the Selective Service and Training Act which granted the same pay and allowances to enlisted men of the Navy as it provided for enlisted men in similar grades in the Army and Marine Corps, Public Law No 801 which, among other provisions, extended credit for military service rendered during time of any war, for railroad employees' retirement purposes; Public Law No 142 eliminating the former "relative needs test" and granting actual veteran preference on WPA employment projects. The 43rd National Encampment will be held in Detroit, August 23-28.

Veterinary Medical Association, American, founded in 1863 to promote veterinary science and its proper application. Membership 7,000. President H. W. Jakeman Secretary J. G. Hardenbergh Headquarters 600 South Michigan Avenue, Chicago, Ill. The International Veterinary Congress prize for outstanding research was awarded in 1941 to Dr. Adolph Eichorn, Animal Disease Station, Beltsville, Md. The 1941 meeting was held in Indianapolis, Ind. The 1942 meeting is scheduled for August 17-21, at San Francisco, Calif.

Vocational Association, Inc., American, founded in 1925 with the conviction that occupational education is a primary right and privilege of every citizen. Membership: 25,711. President L. R. Humphreys Executive Secretary L. H. Dennis Headquarters 1010 Vermont Avenue, N.W., Washington, D.C. During 1941 the Association gave organized assistance to the effective development of vocational training for national defense industries. Over a million and half persons were trained for occupations in defense industries in the last year and thousands are in training at the year's end. The annual convention was held in Boston, Mass., in December, 1941.

Vocational Guidance Association, Inc., National, founded in 1913 to unite persons engaged or interested in any phase of vocational guidance and occupational adjustment. Membership 3,300. President George E. Hutcherson Executive Secretary Clarence W. Falor. National Headquarters 425 West 123rd Street, New York City. Official journal *Occupations*, the Vocational Guidance Magazine, published monthly October to May. The organization carries on its work through 63 branches located in 31 states, two territories, and a Canadian province, national committees specializing in various phases of

vocational guidance, regional conferences; and a national convention held at Atlantic City, N.J., in February, 1941, and scheduled for San Francisco, Calif., Feb. 18-20, 1942.

Volunteer Rescue Army, See PHILANTHROPY.

Weights and Measures, American Institute of, founded in 1916 to defend the English system of weights and measures against pro-metric propaganda. Membership. 85 corporations. President W. R. Ingalls Secretary Robert F. Cogswell. Headquarters 33 Rector Street, New York City.

Wildlife Institute, American, an educational and scientific organization for the restoration of North American wildlife, founded in 1935. President Frederic C. Walcott Secretary J. Paul Miller Headquarters 822 Investment Building, Washington, D.C. The Institute maintains ten cooperative game management and wildlife research units in different States. Activities during 1941 included waterfowl investigations at Delta, Man, Canada, bass stream improvement in Indiana, initiation of a study of the Atlantic salmon on the Denny's River, Maine, and publication of the results of study on fish predators. Educational activities included series of dramatized radio programs especially adapted for school use on more than 100 stations throughout the country and publication of several educational booklets, including *Life for Wildlife*, a *Teaching Aid*, and *Wild Ducks*. The Seventh North American Wildlife Conference will be held Apr 8, 9, and 10, 1942, at Toronto, Canada.

Woman Geographers, The Society of, organized in 1925 to form a medium of contact between women engaged in geographical work and its allied arts and sciences; to further geographical work in all its branches; to spread geographical knowledge, and to encourage geographical research. Membership 300. President Frances Carpenter Huntington Treasurer Helen M. Strong Headquarters 232 Barr Building, Washington, D.C. Meetings of the Society's groups are held in New York City, Chicago, and Washington, D.C.

Woman's Christian Temperance Union, National (W.C.T.U.), founded in 1874 to unite the Christian women of the United States for the education of public sentiment to total abstinence from the use of all alcoholic liquors, and to train the young in habits of sobriety. Membership about 500,000. President Mrs. Ida B. Wise Smith Secretary Mrs. Anna Marden DeYo Headquarters 1730 Chicago Avenue, Evanston, Ill. Four special issues of *The Union Signal*, a weekly magazine with circulation in 54 countries of the world, will be devoted to expositions of the Quarterly Temperance Sunday School lessons in March, June, September, October, 1942. These will be invaluable to church workers. Much emphasis is being placed in support of Senate Bill 860, intended to "Defend Our Defenders" by affording the same protection from beverage alcohol that was given to the men in the first World War. The 1942 convention will be held September 25-29 in Birmingham, Alabama. See LIQUOR PRODUCTION.

Women Artists, Inc., National Association of, founded in 1889 to exhibit and display works of art by contemporary artists. Membership 800. President Bianca Todd Executive Secretary Josephine Droegge Headquarters the Argent Galleries, which the Association maintains, 42 West 57 Street, New York City. The Association sponsors an Annual Exhibition, at which a number of prizes are awarded, general exhibitions, rotary shows, a sketch class, lectures, etc. The annual open meeting is held at the headquarters the second Wednesday in April.

Women's Clubs, General Federation of, founded in 1890 to bring into communication with one another the various women's clubs throughout the world. Membership 2,000,000 in 16,500 clubs. President Mrs. John L. Whitehurst, Headquarters 1734 N Street, N.W., Washington, D.C. An "all out" national defense program was instituted by the new president in May, 1941. A newly created department of National Defense was composed of 14 committees carrying on active programs: Agriculture, Americanization, Aviation, Conservation, Consumer Problems, Housing, Library, Nursing, Nutrition, Organization, Recreation, Registration, U.S. Stamps and Bonds. Seven other departments have programs keyed to National Defense, they are American Citizenship, American Home, Fine Arts, International Relations, Junior Club Women, Legislation and Public Welfare. At a meeting of representatives of 100 leading national organizations of women held in the spring of 1941, the Federation's National Defense program was accepted as a working basis. A series of forums on national defense subjects with high government officials and Army and Navy officers, will be held Jan 23-26, 1942, as a feature of the annual mid-winter meeting of the Board of Directors. Annual convention of the Federation will be held in Fort Worth, Texas, April 27-May 2, 1942, which will be followed by a good-will trip to Mexico, where forums on education, welfare and defense will be held by Mexican and American women.

Women Voters, National League of, established in 1920 to promote political education through active participation of citizens in government. Membership 32 affiliated State Leagues and 590 local Leagues. President Miss Marguerite M. Wells Secretary Mrs. D. Bailey Calvin Headquarters 726 Jackson Place, Washington, D.C. A biennial convention is to be held in Chicago in April, 1942.

World Alliance for International Friendship through the Churches, founded in 1914 to promote international goodwill and peace. Membership: about 1,000. President: Rt. Rev. G. Ashton Oldham. General Secretary: Henry A. Atkinson. Headquarters. 70 Fifth Avenue, New York City. The organization published in 1941 a monthly *News Letter*; eight special issues of the *News Letter* (a) *American Plans for World Order* (b) *Pan Americanism and the Local Church* (c) *A Just and Lasting Peace for Asia* (d) *Religious Work for Army Camps* (e) *Official Peace Aims* (f) *Peace Aims of the Churches* (g) *Peace Aims (Church Peace Union Statement)* (h) *World Alliance Message and Program; To Build A Better World; and International Problems for Religious Young People*.

World Peace Foundation, established in 1910 to promote international order and peace through publications, study groups, and a reference service. It has no membership other than the 15 Trustees. President: George H. Blakelee. Director: S. Shepard Jones. Headquarters: 40 Mt. Vernon Street, Boston, Mass. The Foundation published in 1941 Volume II of *Documents on American Foreign Relations, The China of Chiang K'ai-shek and the following titles in its America Looks Ahead Series: Australia and the U.S., Canada and the U.S., Economic Defense of Latin America, Dependent Areas in the Post-War World and Argentina and the U.S.* Various round table discussions were held on American foreign policy.

Young Men's Christian Associations, The National Council of (Y.M.C.A.), formed as a national committee in 1866. The first local organization was formed in London in 1844 (in the United States in 1851) for the physical, mental, social, moral, and religious education of youth. Membership 1,224,410 in 1,292 local associations. President: Frank A. Bayley. General Secretary: Eugene E. Barnett. Headquarters: 347 Madison Avenue, New York City. Major emphasis in 1941 included service to young men in military and related defense service as one of six agencies composing the United Service Organizations for National Defense, with responsibility for operating approximately 140 clubs and centers, in addition to extending regular facilities everywhere. Also expanded greatly needed service among four million prisoners of war, through World's Alliance at Geneva, and continued fifty-year-old program of international cooperation in thirty countries. Important meetings were the Sixth North American Assembly of Y.M.C.A. Workers with Boys at Louisville, Kentucky, the National Physical Education Convention at Berea College, the International Conference on Basic Membership Policies at Silver; the 24th Conference on Industrial Relations at Detroit Bay, and special institutes for foremen and transportation workers. Other emphases included citizenship and public affairs, national uniform membership and program reporting, and public relations. Plans were laid by the National Council for the Centennial celebration of the founding of the Y.M.C.A. in London in 1844.

Young Women's Christian Associations of the United States of America (Y.W.C.A.), established in 1906 to advance the physical, social, intellectual, and spiritual interests of young women. Membership: about 590,000. President: Mrs. Henry A. Ingraham. General Secretary: Miss Emma P. Hirth. Headquarters: 600 Lexington Avenue, New York City. In April 1941, a nation-wide broadcast from Washington, D.C. marked the close of a series of celebrations in observance of the 60th anniversary of the Girl Reserves (younger girls) in the Y.W.C.A. In April, also, a luncheon in honor of Lady Halifax, former president of the British Y.W.C.A. War Time Appeal, took place at the Waldorf-Astoria in New York City, with an attendance of 2,500. In 1941, nearly 8,000,000 women and girls had some share in the program carried on by the Y.W.C.A. in the United States in its 1,472 local centers. In addition to its regular program of service to women and girls, the Y.W.C.A. took responsibility, as one of the agencies in the United Service Organizations for National Defense, Inc., for helping to meet the needs of women and girls affected by camp concentrations and defense industries. Its activities on behalf of refugees arriving from abroad were also continued, and Associations in other countries were aided by grants of money, raised through the Y.W.C.A. World Emergency Fund, in meeting the many emergency needs created by the war.

Youth Commission, American, formed in 1935 by the American Council on Education to investigate the problems of and develop a comprehensive program for the care and education of youth. Membership: 16. Chairman: Owen D. Young. Director: Floyd W. Reeves. Headquarters: 744 Jackson Place, Washington, D.C. During 1941 the Commission wrote its general report. Recommendations were made for next steps in national policy for youth. Publications of the year were in the fields of personality development of Negro youth, work camps for college and high school students, public youth work programs, education in family living, recreation and leisure, and youth serving organizations. Forthcoming publications include staff reports on youth in the OCC camps, definitive findings in Negro youth problems, and youth employment and unemployment. See EDUCATION under *Youth Unemployment*; YOUTH MOVEMENT.

Youth Congress, American, established in 1934 to serve as a cooperating center and a clearinghouse for all

youth and youth-serving organizations. Membership: organizations estimated to reach 4,500,000 young people. Chairman: Jack McMichael. Executive Secretary: Frances M. Williams. Headquarters: 230 Fifth Avenue, New York City. The Seventh Annual American Youth Congress was held at Philadelphia, July 8-6, 1941. A National Town Meeting of Youth was held in February, 1941, at Washington, D.C.

Youth Correction Authority. See PRISONS, PAROLE, AND CRIME.

Zionist Organization of America, founded in 1897 to enlist public support for the upbuilding of a Jewish national homeland in Palestine and to foster a program of Jewish renaissance. Membership: 50,000. President: Judge Louis E. Levinthal. Executive Director: Simon Shetzer. Headquarters: 1720-16th Street, N.W., Washington, D.C. The destruction of European Jewish communities thrust upon the American Zionist Organization the sole responsibility for continuing the upbuilding of the Holyland.

Zionist Organization of America, Women's, listed under *Hadassah*.

Zonta International, a classified service club for women executives, organized in 1919 to encourage high ethical standards in business and to improve the legal, professional, economic, and political status of women. Membership: about 4,500. President: Mrs. May Moyers McElroy. Executive Secretary: Miss Harriet C. Richards. Headquarters: 59 E. Van Buren Street, Chicago, Ill. A new district was organized in 1940—District 5, comprising the States of Texas, Oklahoma, Arkansas, and Louisiana. The 20th Annual Convention was held at Estes Park, Colo., in June, and Zonta Week was observed November 3-8. The annual \$500 Amelia Earhart Scholarship for post-graduate study in aeronautics was awarded in 1941 to Miss Mildred W. Boyden, a graduate student at the University of Chicago. The 1942 convention will be held at Toronto, Canada, June 29-July 2.

Zoologists, American Society of. See ZOOLOGY.

SOCOTRA. See ARABIA under *Aden Protectorate*.

SOILS, SOIL CONSERVATION. See AGRICULTURE, U. S. DEPARTMENT OF; FOUNDATIONS. Compare FERTILIZERS.

SOLOMON ISLANDS. See AUSTRALIA; BRITISH EMPIRE.

SOMALILAND, British. See BRITISH SOMALILAND.

SOMALILAND, French. See FRENCH SOMALILAND.

SOMALILAND, Italian. See ITALIAN EAST AFRICA.

SOUTH AFRICA, Union of. A self-governing dominion composed of former British colonies in the southern part of Africa and ranking as a member of the British Commonwealth of Nations. Capital, Pretoria (seat of administration); Cape Town (seat of the Legislature).

Area and Population. The area by provinces and the population by provinces and racial composition as officially estimated for June 30, 1940, are shown in the accompanying table.

SOUTH AFRICA: AREA AND POPULATION
[Estimated, June 30, 1940]

Province	Area, sq miles	Europeans	Bantus	Asiatics & mixed
Cape of Good Hope	277,169*	827,600	2,157,400	748,300
Natal	35,284	201,900	1,668,300	215,400
Transvaal	110,450	922,200	2,708,700	83,000
Orange Free State	49,647	201,000	589,700	17,700
Total	472,550	2,152,700	7,124,100	1,064,400

* Including Walvis Bay (430 sq. miles).

The census population of May 5, 1936, totaled 9,589,898 (European, 2,003,857; non-European, 7,586,041), as compared with a total estimated population of 10,341,200 (European, 2,152,700; non-European, 8,188,500) on June 30, 1940. European births registered in 1939 numbered 53,805 (25.4 per 1,000); deaths, 19,846 (9.4 per 1,000). Populations of the chief cities, including suburbs, at the 1936 census were, with the number of Europeans in parentheses: Johannesburg, 519,384 (257,671); Cape Town, 344,233 (173,412); Durban, 259,608 (95,033); Pretoria, 128,621 (76,935); Port Elizabeth, 109,841 (53,461); Germiston, 79,440 (32,564); East London, 60,563 (31,311); Bloemfontein, 64,233 (30,291). The same census showed

that the home language of 1,120,770 persons (55.93 per cent of the European population) was Afrikaans, 783,071 (39.08 per cent) English, 50,411 (2.52 per cent) English and Afrikaans, 17,810 German, and 17,684 Yiddish.

Defense. According to an official Washington estimate, the active army on Jan. 1, 1941, totaled 9,000 officers and men; trained reserves, 17,000; active air force, 2,000. Membership in rifle associations in 1939 was about 124,100. Defense estimates for 1940-41 totaled £28,000,000. The naval establishment is restricted to two mine-sweeping trawlers and other auxiliary craft. Also see *History*.

Education and Religion. State-conducted and State-aided public schools numbered 4,278 in 1938 for pupils of European stock and 5,001 for others; pupils numbered, respectively, 386,880 and 589,308. Normal expenditures of these schools, 1938, £9,898,216 (South African pounds). At Cape Town, Stellenbosch, Witwatersrand, and Pretoria are four universities; that at Pretoria, the University of South Africa, conducts five colleges in different parts of the Union. Universities' students numbered, in 1938, 9,492. According to the census of 1936 the religious affiliations of people of European descent were chiefly: Dutch churches, 1,088,826; Anglican, 345,103; Presbyterian, 82,283; Methodist, 140,658; Roman Catholic, 92,352; Jewish, 90,662.

Production. Agriculture, mining, and manufacturing are the leading occupations. Gold production, the largest single source of wealth, reached the record level of 14,037,741 oz. valued at £117,897,024 in 1940 (12,819,344 oz. valued at £95,326,919 in 1939). Output of other minerals in 1940 was (in short tons): Coal, 18,933,764; chromite, 180,390; copper, including gold concentrates, 19,804; iron ore, 704,113; manganese ore, 454,233; pyrites, 40,456; asbestos, 27,392; magnesite, 13,098; corundum, 4,211. The 1940 platinum production was 70,272 oz.; diamonds, 1,249,828 carats valued at £2,604,172 in 1939 (exports in 1940 were 396,519 carats worth £2,331,267).

Production of the chief crops in 1939-40 was (in metric tons): Wheat, 416,700; rye, 18,900; oats, 80,700; corn, 1,824,700; barley, 25,800 in 1937-38. Other important crops are potatoes, citrus fruits, tobacco, tea, and sugar cane. Livestock in 1938 included 32,861,077 sheep, 11,578,527 cattle, 6,193,084 goats, and 777,590 horses (1937). The 1939-40 wool clip was 793,415 bales. Trawl-caught fish declined from 40,131,519 lb. in 1938 to 20,464,378 in 1940 due to requisitioning of trawlers for mine-sweeping. The census of 1937-38 showed 10,234 industrial establishments, which paid wages of £45,000,000 to 348,520 employees (including 143,760 Europeans).

Foreign Trade. Imports in 1940 totaled £105,099,234 (£91,341,108 in 1939); exports, excluding gold, £34,090,637 (£34,196,010 in 1939). Figures are in South African currency. The United Kingdom supplied 37.6 per cent of the 1940 imports and took 57.3 per cent of the exports (excluding gold); the United States supplied 25 per cent and took 12.3 per cent. Trade with the British Empire accounted for 56.1 per cent of all 1940 imports and 77.6 per cent of the exports.

Finance. The Union's draft budget for the fiscal year ended Mar. 31, 1942, estimated receipts at £73,640,000 and expenditures at £130,949,000, of which £57,309,000 was to come from the loan fund. In the three war budgets of 1940-41, revenues were estimated at £59,377,000 and expenditures at £128,047,206. Defense costs soared from £14,000,000 in the original 1940-41 budget and

£60,000,000 in the supplementary 1940-41 budgets to £72,000,000 in 1941-42. South Africa entered the war in a strong financial position. During 1940-41 the funded external sterling debt was reduced by an additional £7,960,000, while three internal loans yielded £29,180,000 from public subscriptions. The gross public debt rose from £278,876,359 on Mar. 31, 1939, to about £363,000,000 on July 31, 1941. The average exchange rate of the South African pound was \$4.4017 in 1939, and \$3 98 in 1940 and 1941.

Transportation. In September, 1941, 13,925 miles of railway lines were being operated by the government-owned South African Railways. During 1940 they carried 120,282,087 passengers and 28,834,557 tons of revenue and nonrevenue freight. The highway mileage in 1940 was 92,143 (see *ROADS AND STREETS*). The government-operated air lines in 1939 carried 35,578 passengers and 2,640,984 lb. of freight and mails. During 1941 new routes opened by this system connected Johannesburg with Loanda (Angola), via Cape Town, Windhoek (South-West Africa), Mosamedes (Angola) and Lobito (Angola), and with Leopoldville (Belgian Congo), via Bulawayo (Southern Rhodesia), Lusaka (Northern Rhodesia), Dadoma (Tanganyika), Nairobi (Kenya), Entebbe (Uganda), and Stanleyville (Belgian Congo). During 1939, 2,205 overseas vessels of 9,729,873 net registered tons entered Union harbors and landed 4,838,235 tons of cargo.

Government. Executive power is exercised by the Governor General, appointed by the King on recommendation of the South African Government, and by the Executive Council (Cabinet), which is responsible to Parliament. Parliament consists of a Senate of 44 members serving 10-year terms (8 appointed by the Governor General and 36 elected) and a House of Assembly of 152 members, elected by white male and female suffrage for five years unless sooner dissolved. Governor General in 1941, Sir Patrick Duncan (assumed office March, 1937).

The United Party, which had controlled the Government since 1933, split on Sept 5, 1939, when Prime Minister J. B. M. Hertzog's neutrality policy was opposed by Gen. J. C. Smuts, then Deputy Prime Minister, and defeated in the House of Assembly, 80 to 67. Prime Minister Hertzog resigned when the Governor General refused his request for the dissolution of Parliament and new elections. General Smuts formed a new Government Sept. 5, 1939, with the support of the Dominion and Labor parties. On September 6 he proclaimed the Union to be at war with Germany. Dissident elements in the United Party then merged with the pro-republican Nationalists under Dr. D. F. Malan to form the Reunited National or People's party in opposition to the Government. There was a split in the Reunited Party in November, 1940, when General Hertzog and a group of his followers resigned in protest against the Malanite program for immediate establishment of a Boer-dominated republic (see *YEAR BOOK* for 1940, pp. 702-03). The line-up in the House of Assembly at the beginning of 1941 was: Government bloc, 85 (United Party, 70; Dominion Party, 8; Labor Party, 4; Native representatives, 3); Reunited National Party, 67. For 1941 developments, see below.

HISTORY

The future of the Union of South Africa as a member of the British Commonwealth of Nations still hung in the balance during 1941, awaiting the outcome of the World War. In the absence of elections, Prime Minister Smuts and his pro-war Gov-

ernment retained a safe parliamentary majority. The brilliant successes of South African forces in Italian East Africa (see **WORLD WAR**) strengthened General Smuts' position politically, while heavy losses suffered by the South African contingent in the Libyan offensive in November-December had the opposite effect. The important section of the Afrikaans-speaking population opposing participation in the war was split and weakened by further dissension among its leaders over the question of secession from the British Commonwealth. But in general there appeared to be no great change in public sentiment on these basic issues.

The formidable problem of financing the Union's war preparations and activities was met with the aid of the Union's huge gold production and through the assistance of Great Britain and the United States. The United States became increasingly important to South Africa, both as a supplier of its military and civilian needs and as the chief purchaser of its gold.

The Political Field. The continuance of his strong majority in Parliament made the political part of Premier Smuts' task relatively simple. He informed the Senate at the beginning of February that South African troops were about to fight on the Mediterranean coast of the continent and declared that if, after that area had been cleared up, it should be necessary to send troops overseas Parliament would be consulted. This confirmed an earlier declaration that he intended to put before that body the matter of sending troops beyond the African continent whenever the occasion should arise.

Gen. J. B. M. Hertzog, the most influential anti-war leader, had withdrawn from active politics late in 1940. Some of his followers, under former Minister of Finance N. C. Havenga, formed a new party of Hertzog stalwarts in the closing days of January, 1941, calling it the Afrikaner party. Its creation hurt the Reunited Nationalist party, from which after a short union Hertzog had lately withdrawn (see above under *Government*).

Hertzog accepted the honorary presidency of the new party. Addressing a meeting of its executive committees at Johannesburg near the end of October, he advocated national socialism of the German variety as the only solution of South Africa's economic and political problems. His stand was repudiated the next day by the Afrikaner party and by its leader, Havenga, who had been a close political associate of Hertzog's for 40 years. The party formally affirmed its adherence to democratic principles. This development, in combination with the split of 1940 in the Reunited Nationalist party, served to confuse and weaken the Afrikaner groups opposed to participation in the war or to maintenance of the British connection.

The intensity of feeling on these issues was indicated by the severe rioting that broke out in Johannesburg January 31. Union soldiers attempted to break up a meeting of the Ossewabrandwag, an extremist organization of Afrikaners. Sporadic violence continued for three days, despite repressive measures taken by the police. Offices of Nationalist newspapers were stoned and 230 persons (mostly soldiers) were injured before troops were brought in to end the disorders.

Participation in the War. Previously at war with Germany and Italy, the Union entered war with Japan on December 9. The active participation of the Union's forces on land in 1941 was limited to the fields of Ethiopia, Somaliland, and Libya. Premier Smuts stated the South Africans' casualties in the battle of Rezegh, in Libya, as approximately 1,200. A South African Purchasing Commission of

five members was appointed, about July 12, to obtain goods in the United States. In collaboration with the British Government it there represented the Union in the increasingly heavy purchase of American goods, chiefly under the terms of the U.S. Lease-Lend Act, and mainly for needs of war. Decreasing heavy penalties for the taking of unreasonable profits August 29, limiting prices, regulating hours of work upward, and restricting imports from countries not on the sterling monetary basis, September 14, after the manner of other parts of the British Empire, the Union had acquired by the latter part of 1941 most of the devices that other of the dominions used to protect their economy from avoidable stress of war. A previously executed treaty with the U.S. Government came into force, March 11; it provided a commission of five members for the conciliation of disputes. As South Africa came to limit imports, it fell to the Purchasing Commission to coordinate the purchases of the governmental branches and of private buyers on U.S. export licenses. An offer from the British Government to buy the whole year's clip of wool helped the Union through the difficulty raised by the loss of its European continental market.

Gold Mining. The difficulty of mining gold with a profit in times of scanty labor and high cost lent unusual interest to the question whether the South African production of gold could be fully maintained in 1941. No early estimates of output of 1941 appeared. It was reported, however, that the mines had 400,000 men or more at work. A great part of the gold sent from South Africa in 1941 was brought to the United States and there delivered to the New York Assay Office.

Industrialization at Home. The emergency of war intensified the wish of some elements in South Africa to broaden the country industrially and make it produce a greater part of what it needed. The South African Iron and Steel Industrial Corporation began the construction of an establishment designed eventually to put out 2,000,000 tons a year of steel products, or six fold the output of the Union before the war. The intended initial output was 1,000,000 tons a year. The works, situated on the Vaal River, were to cost £10,000,000, employ 10,000 persons, and fill the Union's normal requirements of steel.

Personalities. Lord Harlech (W. G. A. Ormsby-Gore) was appointed, February 21, British High Commissioner in the Union of South Africa. Premier Smuts was appointed, May 24, a Field Marshal of the British Army, on his attaining the age of 71 years Rear Admiral G. W. Hallifax, director of the South African seaward defenses, and Col. H. Cilliers, director of coast aircraft and artillery, died in a flying accident, January 28.

See **LABOR CONDITIONS** under *Hours of Work*; **PORTS AND HARBORS**; **WORLD WAR**

SOUTH AMERICA. A continent comprising 10 republics (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela) and three colonies (British Guiana, French Guiana, and Surinam). Total area, about 6,934,356 square miles; population, 91,300,000 (Dec. 31, 1938 estimate). See **COMMUNISM**, **FASCISM**, **PAN AMERICANISM**, **PAN AMERICAN UNION**, **REGIONAL CONFERENCE OF THE RIO DE LA PLATA**; also separate articles on each country and colony, as **ARGENTINA**, **BOLIVIA**, **BRAZIL**, and **CHILE**.

SOUTH AUSTRALIA. See **AUSTRALIA** under *Area and Population*.

SOUTH CAROLINA. A south Atlantic State. Area: 31,055 sq. mi., including 461 sq. mi. of inland water, but excluding Atlantic coastal waters, 138 sq. mi. Population: (1940 census) 1,899,804. The urban population comprises 24.5 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 43.0 per cent (U.S. average, 10.2); elderly (65 years and over), 4.2 per cent. South Carolina ranks 39th among the States in area, 26th in population, and 18th in density, with an average of 62.1 persons per square mile. The capital is Columbia with 62,396 inhabitants; largest city, Charleston, 71,275. There are 46 counties and 10 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK) For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to J. H. Hope, Superintendent of Education, there were 481,750 pupils enrolled in the public schools of South Carolina during the school year 1940-41, 397,950 in elementary schools and 86,800 in secondary schools. Teachers numbered 3,493 and received an annual average salary of \$1,008. Total expenditures for the year were \$17,953,412. For higher education see *South Carolina* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 8,521, of which 6,843 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 343,688; 289,088 were private and commercial automobiles, 1,278 busses, and 46,406 trucks and tractor trucks. Gross motor-fuel consumption was 234,307,000 gal. Net motor-fuel tax receipts were \$13,910,000, the rate being six cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$2,104,000.

Railways of all classes extended 3,486 miles (Dec. 31, 1939) 1.48 per cent of the total mileage in the United States. Class 1 steam railways (2,322 miles) reported 5,342,846 tons of revenue freight originating in South Carolina in 1940 and 6,881,061 tons terminating in South Carolina. There are 29 airports and landing fields in the State (10 lighted fields) and five seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 204 civil aircraft in the State and 861 commercial and private pilots (768 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 4,871,000, as compared with 5,034,000 acres in 1940. According to the latest census, there are 137,558 farms, valued at \$338,393,517, averaging 81.7 acres each. Farm population numbered 915,597 or 48.2 per cent of the total. Leading crops with production in 1941 were: Cotton lint, \$34,425,000, 405,000 bales; corn, \$16,960,000, 22,316,000 bu.; tobacco, \$16,500,000, 66,000,000 lb.; cottonseed, \$9,540,000, 180,000 tons; hay, \$6,986,000, 477,000 tons; oats, \$6,655,000, 12,100,000 bu.

Manufacturing. The total value of manufactured products, according to the latest census (for the year 1939) was \$397,512,863; 1,331 establishments employed 126,980 wage earners who received \$86,616,242 in wages for the year.

Mineral Production. The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$5,422,979, or only .13 per cent of the United States total. Chief items are stone, clay products, and raw clay.

Trade. According to the 1940 census there were 1,450 wholesale establishments in South Carolina, employing 8,241 persons, reporting net sales for 1939 of \$297,211,000 and annual pay roll of \$9,994,000. There were 18,520 retail stores with

41,119 employees, reporting sales of \$332,224,000 and pay roll of \$29,093,000. Service establishments numbered 5,351, employing 10,730 persons for \$5,982,000 per year, and reporting a business volume amounting to \$18,877,000. The leading business center of the State is Columbia which reported wholesale sales of \$46,576,000 and retail sales of \$33,193,000. Charleston reported sales of \$31,292,000 wholesale and \$29,064,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in South Carolina was \$30,781,000. Under the Social Security program, financed by Federal funds matching State grants, 17,683 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$7.95 (U.S. average pension, \$21.08); 10,992 dependent children in 3,760 families received average monthly payments of \$18.72 per family (U.S. average, \$32.73); and 801 blind persons received \$10.27 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 2,261 and received \$8.21 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 3,579 (\$237,000); NYA student work program, 5,652 (\$35,000); NYA out-of-school work program, 6,442 (\$120,000); WPA, 25,801 (\$1,661,000), other Federal emergency projects, 2,626 (\$329,000); regular Federal construction projects, 15,963 (\$2,151,000). The Farm Security Administration certified subsistence payments totaling \$41,000 for the month to 692 cases.

Legislation. The General Assembly convenes in regular session on the second Tuesday of January annually. It is composed of 46 Senators and 124 Representatives, all of whom are Democrats.

Finances. Total tax collections in South Carolina for the fiscal year ending in June, 1941, were \$39,198,000 (1940: \$34,637,000). Total sales taxes amounted to \$23,605,000, including motor fuel, \$14,650,000. Taxes on specific businesses ran to \$4,215,000, general and selective property, \$902,000, unemployment compensation, \$5,236,000. The net income taxes were \$4,396,000. Cost payments for the operation of general government totaled \$32,483,000 in 1939, the latest year available. (Revenues for the general government for that year were \$40,469,000.) Cost of operation per capita was \$17.30. Total gross debt outstanding in 1941 was \$71,738,000, as compared with \$78,528,000 in 1932.

Officers and Judiciary. The Governor is Burnet R. Maybank (Dem.), inaugurated in 1939 for a four-year term; Lieutenant Governor, J. E. Harley; Secretary of State, W. P. Blackwell; Attorney General, John M. Daniel; State Treasurer, Jeff B. Bates; Comptroller-General, A. J. Beattie; State Auditor, J. M. Smith. Chief Justice of the South Carolina Supreme Court is Milledge L. Bonham; there are four associate members elected by the General Assembly for 10-year terms.

See HURRICANES; PORTS AND HARBORS; PRISONS, PAROLE, AND CRIME CONTROL.

SOUTH DAKOTA. A west north central State. Area: 77,047 sq. mi., including 511 sq. mi. of inland water. Population: (1940 census) 642,961. The urban population comprises 24.6 per cent of the total (U.S. average, 56.5 per cent); non-white population, 3.8 per cent (U.S. average, 10.2); elderly (65 years and over), 6.8 per cent. South Dakota ranks 14th among the States in area, 37th in population,

and 41st in density, with an average of 8.4 persons per square mile. The capital is Pierre with 4,322 inhabitants; largest city, Sioux Falls, 40,832. There are 69 counties and six cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to J. F. Hines, Superintendent of Public Instruction, there were 133,378 pupils enrolled in the public schools of South Dakota during the school year 1940-41, 95,994 in elementary schools and 37,384 in secondary schools. Teachers numbered 7,952 and received an annual average salary of \$828.76. Total expenditures for the year were \$12,288,110.44.

Transportation. State highway mileage in 1939, including streets under State control, totaled 6,003, of which 5,269 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 198,615; 163,252 were private and commercial automobiles, 117 busses, and 32,298 trucks and tractor trucks. Gross motor-fuel consumption was 145,713,000 gal. Net motor-fuel tax receipts were \$4,527,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$1,794,000.

Railways of all classes extended 4,127 miles (Dec. 31, 1939) 1.76 per cent of the total mileage in the United States. Class I steam railways (4,062 miles) reported 1,979,094 tons of revenue freight originating in South Dakota in 1940 and 2,511,296 tons terminating in South Dakota. There are 23 airports and landing fields in the State (four lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 107 civil aircraft in the State and 578 airline transport, commercial, and private pilots (520 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 14,472,400, as compared with 13,631,600 acres in 1940. According to the latest census, there are 72,454 farms, valued at \$505,452,178, averaging 544.8 acres each. Farm population numbered 307,762 or 47.9 per cent of the total. Leading crops with production in 1941 were: Wheat, \$33,725,000, 35,130,000 bu.; corn, \$31,504,000, 50,006,000 bu.; oats, \$18,121,000, 54,912,000 bu.; barley, \$17,761,000, 38,610,000 bu.; hay, \$9,566,000, 2,090,000 tons.

Manufacturing. The total value of manufactured products, according to the latest census, was \$31,171,887 for the year 1939; 468 establishments employed 5,538 wage earners who received \$6,035,524 in wages for the year.

Mineral Production. The chief mineral product is gold, of which 610,223 fine ounces were produced in 1941, valued at \$21,357,805, as compared with 586,662 ounces, \$20,533,170 in 1940. The total value of minerals produced in 1939, according to the U. S. Bureau of Mines, was \$24,811,231 or .59 per cent of the total for the United States.

Trade. According to the 1940 census there were 2,022 wholesale establishments in South Dakota, employing 4,697 persons, reporting net sales for 1939 of \$133,396,000 and annual pay roll of \$5,631,000. There were 9,817 retail stores with 17,307 employees, reporting sales of \$169,396,000 and pay roll of \$13,592,000. Service establishments numbered 2,964, employing 2,560 persons for \$1,750,000 per year, and reporting a business volume amounting to \$8,205,000. The leading business center of the State is Sioux Falls which reported wholesale sales of \$42,641,000 and retail sales of \$23,285,000. Rapid City reported retail sales of \$10,450,000.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in South Dakota was \$16,353,000. Under the Social Security program, financed by Federal funds matching State grants, 14,968 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$19.15 (U. S. average pension, \$21.08); 3,548 dependent children in 1,522 families (figures include aid administered without Federal participation) received average monthly payments of \$27.08 per family (U. S. average, \$32.73); and 281 blind persons received \$16.85 per month (U. S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 3,126 and received \$13.99 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses). CCC, 2,609 (\$173,000); NYA student work program, 5,129 (\$29,000), NYA out-of-school work program, 2,657 (\$52,000), WPA, 9,764 (\$570,000); regular Federal construction projects, 1,727 (\$164,000). The Farm Security Administration certified subsistence payments totaling \$21,000 for the month to 1,097 cases.

Legislation. The Legislature convenes in regular session on Tuesday after the first Monday of January in odd years. It is composed of 35 Senators (4 Democrats and 31 Republicans in 1941) and 75 Representatives (10 Democrats and 65 Republicans). Major activities during the two-months session of 1941 were summarized as follows in an Associated Press dispatch supplied through the courtesy of the Sioux Falls *Daily Argus-Leader*:

Taxation. Cut sales tax from 3 to 2 per cent, an estimated reduction of \$1,300,000 a year. Reduced income tax rates, a \$175,000 yearly item. Defeated homestead tax exemption, gross ore tax reduction, and exemption of farm machinery from sales tax.

Expenditures. Appropriated about \$17,700,000 for next biennium, boost of nearly \$1,500,000 over previous two years, but largely because of dumping more revenues into general fund, by new grants for aid to dependent children, a \$565,000 institutional building program and \$756,000 given local governments in additional items.

Liquor. Passed measures to hold proprietors responsible for spiking on their premises when they knowingly permit it, to permit prosecution of liquor cases in municipal and justice courts, giving anyone right of action against bond of liquor proprietor who violates law. Defeated bill to return old saloon by permitting bars to handle package liquor.

Transportation. Three times defeated attempt by truckers to win gross weights more than present 30,000 pound load limit. Said "no" to bill to create highway reciprocity commission to correlate truck taxes with other states. Gave utility commission power to regulate trucks on abandoned railroad lines.

Permanent School Fund. Proposed three constitutional amendments for people to vote on in 1941, granting counties 25 years to pay debt to school fund at 1 per cent interest and to let local units keep enough income from tax-exempt school lands to pay them the equivalent of taxes on that land. Voted \$600,000 yearly as "stop gap" until people act on proposed constitutional changes.

Education. Gave \$775,000 yearly aid to common schools and \$150,000 a year to particularly distressed schools. Defeated attempt to repeal 1939 teachers pension law, but again failed to appropriate for its operation.

Research and Publicity. Turned down modified planning board. Allowed governor \$15,000 to study Missouri River power and manganese possibilities and lobby for their development. Set aside \$10,000 for state advertising under governor. Gave university \$15,000 for business research, and state college slightly increased amounts for agricultural experiment stations.

Oil Exploration. Created three-man conservation board with power to regulate production of any oil or gas that may be discovered. Clarified real estate title procedures and lowered fees for recording leases.

Finances. A partial report on total tax collections in South Dakota for the fiscal year ending in June, 1941, showed \$17,269,000 collected (complete report for 1940: \$17,401,000). Total sales taxes

amounted to \$12,572,000, including motor fuel, \$5,883,000, general sales, \$5,014,000. Taxes on specific businesses ran to \$733,000, general and selective property \$963,000 (1940), unemployment compensation, \$966,000. The net income taxes were \$859,000.

Cost payments for the operation of general government totaled \$15,587,000 in 1939, the latest year available. (Revenues for the general government for that year were \$25,303,000.) Cost of operation per capita was \$23.94. Total gross debt outstanding in 1941 was \$41,436,000, as compared with \$51,432,000 in 1932.

Officers and Judiciary. The Governor is Harlan J. Bushfield (Rep.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, Albert C. Miller; Secretary of State, Olive A. Ringsrud; Attorney General, Leo A. Temmey; State Treasurer, W. G. Douglas; State Auditor, W. W. Warner. Presiding Judge of the South Dakota Supreme Court is S. C. Polley; there are four other judges elected by popular vote for six-year terms.

SOUTHERN RHODESIA. See RHODESIA, SOUTHERN.
SOUTH GEORGIA; SOUTH ORKNEYS. See FALKLAND ISLANDS.

SOUTH-WEST AFRICA. A former German territory in Africa, now administered by the Union of South Africa under a mandate from the League of Nations, dated Dec. 17, 1920. Total area, including Caprivi Zipfel, 322,394 square miles. Population (Jan. 1, 1939), 293,000. Chief towns: Windhoek (capital), 10,651 inhabitants in 1936, Lüderitz, Keetmanshoop, Swakopmund, Walvis Bay (belongs to the Cape of Good Hope but is administered by South-West Africa). Education (1939): European—81 schools and 6,342 pupils; African—99 schools and 5,712 pupils.

Production and Trade. The main industry is stock raising Agriculture, owing to the low rainfall, is only profitable in the northern and northwestern portions of the country. Livestock (1939): 1,053,033 cattle, 4,937,802 head of small stock, 105,642 donkeys, 29,104 horses, and 1,802 mules. During 1939 some 1,583,448 karakul pelts were produced and exported. Dairy products (1939): 10,857,472 lb. of butter and 657,532 lb. of cheese. Minerals produced (1940) included diamonds (30,017 metric carats), gold (1,358 fine oz.), silver (460,000 fine oz.), tin (197 long tons), iron, lead, copper, vanadium (3,171 long tons), tungsten, and salt. Trade (1939): SA £ 2,300,724 for imports and SA £ 3,396,349 for exports (SA £ averaged \$4.4017 for 1939; \$3.9800, 1940).

Government. Budget (1940-41): SA £ 607,000 for revenue and SA £ 813,000 for expenditure. The territory belongs to the South African Customs Union and a lump sum based on the customs and excise taxes on goods consumed is paid to the administration. South-West Africa is governed by an administrator (appointed by the governor general) who is assisted by an advisory council, and a legislative council (12 elected and 6 appointed members). Administrator, Dr. D. G. Conradie (appointed April, 1933).

SOVIET UNION. See UNION OF SOVIET SOCIALIST REPUBLICS.

SOYBEANS. The production of soybeans for beans in the United States in 1941 was estimated by the U.S. Department of Agriculture at 106,712,000 bu., an all-time record, 38 per cent larger than the 77,374,000 bu. of 1940, and three times as large as the

1930-39 average of 35,506,000 bu. A new high record was set again in 1941 for acreage harvested for beans, 5,855,000 acres versus 4,779,000 acres in 1940. The total acreage of soybeans sown alone was 9,996,000 compared with 10,513,000 acres in 1940. Major factors contributing to the large acreage harvested for beans were increase in price and revision in the 1941 Agricultural Conservation Program which permitted growers to harvest a larger acreage than in 1940 without deductions in program payments. Acre yields averaged 18.2 bu in 1941 and 16.2 bu. in 1940. States leading in yields of soybeans for beans were Illinois 49,128,000 bu., Iowa 16,608,000, Indiana 14,552,000, Ohio 13,143,000, Missouri 2,150,000, Arkansas 1,740,000, North Carolina 1,710,000, and Michigan 1,344,000 bu. The season average price per bushel (preliminary) received by farmers was \$1.47 in 1941 and the value of production was estimated at \$157,070,000 versus 90¢ and \$69,597,000 in 1940. Soybean hay production declined to 4,741,000 tons from 3,649,000 acres in 1941 from 6,559,000 tons from 4,916,000 acres in 1940. Soybeans grazed or plowed under in 1941 totaled 1,710,000 acres. See CHEMISTRY, INDUSTRIAL under *Fats and Oils*; HAY.

SPAB. See SUPPLY PRIORITIES AND ALLOCATIONS BOARD.

SPAIN. A state of southwestern Europe. Capital, Madrid.

Area and Population. Area, 196,607 square miles, including the Balearic Islands (1,935 sq. mi.) and the Canary Islands (1,279 sq. mi.). The population in 1940 was estimated at 26,000,000 (23,564,000 at 1930 census), including the Balearic Islands (estimated pop., 381,594 in 1939) and the Canaries (286,154 in 1939). Living births in 1938 numbered about 453,584 (17.8 per 1,000); deaths, 417,919 (16.4). Populations of the chief cities were (1934 estimates except as stated): Barcelona, 1,399,000 (1940); Madrid, 1,194,000 (1940); Valencia, 352,802; Seville, 238,727; Málaga, 203,844; Saragossa, 189,062; Bilbao, 175,898.

Colonial Empire. The principal divisions of the colonial possessions of Spain are listed in the accompanying table. For administrative purposes the Balearic Islands in the Mediterranean, the Canary Islands off the northwest coast of Africa, and the areas of Ceuta and Melilla in north Africa, are considered an integral part of Spain.

Colony (Capital)	Sq. mi. ^a	Population ^a
Spanish Guinea ^b (Santa Isabel)	10,124	120,000
Spanish Morocco ^c (Tetuán)	8,108	750,000
Western Sahara ^d (Villa Cisneros)	110,036	110,038
Total	128,570	890,000

^a Estimated. ^b Includes Rio Muni (on the mainland) and the islands of Fernando Po, Annobon, Corisco, Great Elobey, and Little Elobey. ^c Excluding Tangier (q.v.) which was occupied by Spanish troops on June 14, 1940, and incorporated with Spanish Morocco on Nov. 14, 1940. ^d Includes Rio de Oro, Adrar, and Ifni.

Education and Religion. The 1930 census showed 45 per cent of the adult population as unable to read or write. At the end of the civil war in 1939, the Roman Catholic Church was reestablished as the official religion. The religious orders recovered their pre-republican legal status, properties, state subsidies, teaching rights, jurisdiction over cemeteries, and other privileges. In 1935 there were 4,720,260 pupils in 42,766 elementary schools, 130,752 pupils in 111 secondary schools, and 31,905 students in 11 universities.

Production. The principal occupations are agri-

culture, mining, manufacturing, and fishing. Estimated output of the principal farm products in 1940, with average yield during 1930-34 in parentheses, was (in metric tons except as noted): Wheat, under 2,000,000 (4,302,300); barley, 2,000,000 (2,424,100); rye, 410,300 in 1939 (563,000); oats, 478,600 in 1939 (701,000); corn, 843,300 in 1939 (708,900); rice, 240,000 (297,200); potatoes, (4,781,700); olive oil, 317,000 in 1940-41 (281,200); cotton, 1,600; beet sugar, 110,000 in 1939-40 (about 170,000 in 1940-41). The 1940 wool clip was estimated at some 84,000,000 lb.; cork production, 30,000 metric tons.

Mineral and metallurgical output (1940) in metric tons was: Iron ore, 2,886,973; pig iron, 620,652, steel ingots and castings, 758,682; coal, 8,844,000, pyrites, 957,716 (exports only); lead, 58,490; zinc, 82,626; tin, 255; wolfram, 247; aluminum, 271. A leading producer of quicksilver, Spain exported about 1,450 metric tons in 1938. Manufacturing production in 1940 was above the 1939 level but below that of 1935. The chief manufactures are cotton textiles, paper, glass, cement (1,470,000 metric tons sold in 1940), wood-pulp (output, about 9,000 metric tons in 1940), rayon (7,496,000 lb. in 1940), explosives, etc.

Foreign Trade. Unpublished figures of Spanish foreign commerce during 1940 showed exports valued at 394,335,325 gold pesetas (\$128,839,000) and imports of 620,585,225 gold pesetas (\$202,745,000). The only official trade data issued since 1936 covers the last nine months of 1939. For that period, imports were equivalent to \$111,978,000, exports, \$78,287,000. See YEAR BOOK for 1940, p 707, for more details.

Finance. Budget appropriations for 1940 totaled 7,160,000,000 pesetas, less than half the last peacetime budget. Revenues during the first six months of the year amounted to 2,961,000,000 pesetas, exclusive of new loans. The 1940 budget was extended through 1941 by a decree of Dec. 30, 1940. During the three years of civil war ending in July, 1939, there was a cumulative budget deficit of 8,260,000,000 pesetas, covered mainly by advances from the Bank of Spain. The funded public debt on Jan. 1, 1940, was reported at 23,885,000,000 pesetas. As of June 30, 1940, the foreign debt amounted to 1,200,000,000 gold pesetas, exclusive of the debt to Germany, estimated at 300,000,000 marks. The peseta, equivalent to \$0.0913 at the official rate, had an average nominal exchange value of \$0.0999 in 1939 and \$0.0932 in 1940.

Transportation. In 1941 Spain had approximately 10,340 miles of railway lines, 70,760 miles of roads, and air lines connecting Madrid and the other principal cities with Berlin, Rome, the Canary and Balearic Islands, with London and New York via Lisbon, Portugal, and with Tetuan and Melilla in North Africa. The railways in 1940 carried 168,000,000 passengers (about 65 per cent more than in 1939) and 40,500,500 metric tons of freight. In January, 1941, all standard-gauge railways were placed under direct Government control, to be exercised through an Administrative Council, which was to absorb the privately owned systems. In September, 1940, control of the Compañía Telefónica de España was returned to its shareholders, predominantly American.

Government. As a result of the Civil War of July 17, 1936, to Apr. 1, 1939, the republic established in 1931 was replaced by a Fascist dictatorship, headed by Gen. Francisco Franco as Leader (Caudillo) of the Empire, Chief of State, Commander-in-Chief of the Army, Premier, and head of the Falange Española (government party), in which

were merged all political groups supporting the Franco regime. All other political parties were outlawed. General Franco exercised his dictatorial powers either directly, or through his Cabinet, or through the governing organs of the Falange Española. The Falange organs consisted of a National Council of about 100 members, representing the various pro-Franco political groups, and a Political Council of 19 which served as the permanent governing board of the party. Franco was President of the National Council and appointed its Secretary-General. The National Council was empowered to determine the structure of both the state and the government party, control syndical organizations, etc. The president of the Political Council and guiding spirit of the Falange Española was Ramon Serrano Suñer, Franco's brother-in-law.

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Foreign Policy. Throughout 1941 Nationalist Spain wavered between maintenance of its pro-Axis non-belligerency and outright participation in the war against Britain and her allies. As in 1940 (see YEAR BOOK for 1940, p. 707 f), Madrid was a battleground between German and Italian envoys determined to push Spain into the conflict and Anglo-American diplomats striving to keep it neutral or nonbelligerent. The Axis enticed General Franco with promises of Gibraltar, a part of French North Africa, and restoration of Spain's former influence in Latin America. They demanded repayment of the political debt Franco incurred through Axis assistance during the Spanish civil war. At the same time the Caudillo was warned that overlong delay might encourage an Axis agreement with France that would block Spain's expansionist ambitions in North Africa.

The counter-pressure from Britain, backed by the United States, was equally powerful. Concentrating upon Spain's economic weakness and physical exhaustion, Anglo-American diplomacy offered credits, food, and supplies in return for the continuance of Madrid's nonbelligerency. The British speeded up preparations for a last-ditch defense of Gibraltar, while threatening to clamp a complete blockade upon hungry Spain if it entered upon full-fledged war. Within Spain, the fanatical and powerful pro-war faction of the Falange Española demanded immediate participation in the conflict, while some influential monarchists, church leaders, and army officers opposed it. General Franco held the balance between these opposing forces. German military victories in the Balkans in April-May and again in Russia after June 22 seemingly brought him to the verge of actual warfare. Axis military reverses and a tightening of the diplomatic and economic screws by Britain and the United States moved him back upon the fence of nonbelligerency. With Spain ravaged by hunger and disease and still deeply divided by the hatreds of the civil war, Franco dared not venture into the World War unless an early Axis victory seemed assured.

Conference with Mussolini. Accompanied by Foreign Minister Serrano Suñer, General Franco conferred with Premier Mussolini at Bordighera, Italy, on February 12. The subject of their discussions was not revealed, but it was indicated that Mussolini pressed Franco for military aid against Britain and for repayment of Spain's civil war financial obligations to Italy. Rival Spanish and Italian claims upon Tangier and French North Africa were apparently adjusted. On the way home from Italy, Franco met Marshal Pétain at Montpellier, France, for a discussion of French-Spanish relations. His trip brought no perceptible change in foreign pol-

icy. Spain proceeded in March to tighten its grip on Tangier (q.v.), which Mussolini had coveted. Italo-Spanish relations were not assisted by Italy's increasing military dependence upon Germany, the bombing of La Linea, Spain, by Italian planes attempting a raid on Gibraltar on July 12, or the reported sinking of a Spanish steamer by an Italian submarine in November.

Pro-German Activities. The German victories in the Balkans in April and May made a tremendous impression upon Spain. Spokesmen of the Franco Government were quick to emphasize their support of the Nazi cause. A virulent anti-British campaign was launched by the Falangist press, despite the British Government's advance of a £2,500,000 credit to Spain on April 7 for the purchase of food and raw materials. Toward the end of April, a Spanish declaration of war seemed imminent and there was an exodus of the American colony from Spain to Portugal. At this crucial period the American Ambassador reportedly warned Franco that Washington would not accept a British defeat. Almost at the same time, the first of three ships laden with Red Cross foodstuffs and medical supplies sailed from the United States with Anglo-American permission. Whether from these or other reasons, Franco curbed the prowar trend, especially through the replacement of pro-Nazi members of the Government late in May (see below).

Madrid gave further proof of its friendship for Nazi Germany on May 30, when an agreement for an exchange of Spanish agricultural and other workers for a smaller number of German technicians was approved by the Cabinet. On June 4 the Government announced that it would establish a legation in Hsinking, Manchoukuo, and establish diplomatic relations with Iran to demonstrate solidarity with the Axis "new order."

The German invasion of Russia on June 22 provoked a new wave of prowar sentiment in Madrid. Falangist demonstrators stoned the British embassy and cheered Axis diplomatic representatives. At Hitler's request, Spanish volunteers were recruited for service with the German forces against Russia. The British Government accepted a Franco apology for the anti-British outbreak in Madrid and immediately thereafter (June 30) signed an agreement permitting Spain to import normal gasoline supplies for the ensuing three months. Nevertheless Franco on July 17 strongly attacked the "plutocracies" in a speech before the National Council of the Falange. He declared the hour had arrived to end their "attempts at political shackling incompatible with our sovereignty and our dignity as a nation" in connection with proffers of help for Spain's reconstruction. He said the Allies had already lost the war and that intervention would bring catastrophe to the American continent. Strong measures were promised against internal enemies who sought to obstruct the regime. The British Foreign Secretary replied by threatening to end Anglo-Spanish economic arrangements unless Franco modified his attitude.

The period of rapid German advance into Russia was accompanied by seemingly reliable reports of Axis aircraft and submarines operating from Spanish bases against Allied shipping. Roads from Irun on the French-Spanish frontier to the Portuguese frontier were said to have been strengthened and improved to facilitate the rapid advance of German mechanized forces. German war materials and picked troops were reported to have been concentrated near Gibraltar. Many observers reported a steady influx of German "tourists" and business men. On November 25 Spain joined Germany and

the other Axis powers in renewing the anti-Comintern pact for another five years (see GERMANY under *History*). But meanwhile the German reverses in Russia, increasing American aid to Britain and Russia, and the British offensive in Libya had inspired new caution at Madrid. When Japan and the United States entered the conflict in December, the Franco Government on December 19 announced that it would maintain its policy of non-belligerency.

Relations with United States. The Franco-controlled press directed a constant barrage of violent criticism at U.S. foreign policies during the year, despite Spain's dependence upon American aid in meeting the hunger crisis. A first shipload of food and medicines sent by the American Red Cross reached Spain late in February. From then until the new wheat harvest became available in August, an American Red Cross mission distributed more than \$4,000,000 worth of supplies to about a million Spaniards in famine-threatened districts.

The mission ended distribution of food and medicines in August, partly because of the improved food situation and partly because of the difficulties placed in its path by Franco officials. The Government showed extreme reluctance to give the Red Cross credit for its work. General Franco, Foreign Minister Serrano Suñer, and other spokesmen denounced the United States and Britain for insisting that Spain remain neutral as the price of economic aid. This attitude was declared to be incompatible with Spain's honor. The Falangist organ *Arriba* on June 22 attacked the Red Cross as "Masonic, Jewish, and liberal." On July 17 General Franco publicly scored the United States for "refusing aid to Spain in her hour of need." He charged that Spain had purchased 100,000 tons of wheat in the United States but that Washington had put insuperable obstacles in the way of its shipment. Spain's funds in the United States were impounded by President Roosevelt in June, 1941. Most of the American capital in Spain had been frozen since the beginning of the civil war in 1936. In August, however, Washington issued licenses for the export of oil and gasoline to Spain.

Latin American Policy. The Franco Government played an important role in Axis efforts to undermine inter-American solidarity and wean the Latin American countries away from the United States. The Council of Hispanicism established in 1940 to revive Spanish influence in Spanish America was further developed in 1941. On January 8 more than 60 charter members were appointed to the Council, including Spanish diplomats in leading Latin American capitals, churchmen, writers, and Falange leaders. Serrano Suñer was appointed its president. Seeking to remove suspicions aroused in the Americas by this gesture, Franco declared on February 20 that Spain had no intention of reimposing its rule on Spanish America. Efforts to establish branches of the Council throughout Latin America encountered considerable resistance. This was due in part to the widespread belief that the Council of Hispanicism, like the Latin American branches of the Falange Española, were serving as a screen for Nazi penetration. The Marquis de Aguiar, representative of Spanish Catholic and Royalist groups in the United States, charged on May 19 that every Spanish Consulate and Legation in the Americas maintained a German Nazi representative designated to combat Pan Americanism.

Late in May the Spanish liner *Cabo de Hornos*, fitted out as a propaganda showboat for the Council of Hispanicism, arrived in Montevideo on a tour of Latin American ports. Toward the end of July the

Franco Government sent a circular letter to all the Latin American governments, explaining Franco's reasons for sending Spanish volunteers to fight with Germany against Russia. It was viewed as a move to enlist Latin American sympathies behind the German cause. Prominent Franco sympathizers from many parts of Latin America were invited to attend a meeting sponsored by the Council of Hispanicism in Madrid in October. The Franco Government undertook to pay their expenses. Some delegates reached Madrid via the Italian transatlantic airline from Brazil. Four Mexicans, who sought passage on the Pan American line to Lisbon, were barred when the British Government refused them visas to pass through Bermuda.

United States officials on November 19 issued a memorandum citing evidence to support their charge that the Franco Government of Spain and the Vichy Government in France were apparently taking over from the Germans the task of spreading Axis propaganda in Latin America (see *New York Times*, Nov. 20, 1941). Serrano Suñer on December 16 issued a decree establishing five departments within the Council of Hispanicism, covering cultural, political, economic, social, and juridical relations with the American republics. The Council was empowered to censor all programs and publications relating to Spanish-speaking America.

The pro-Axis propaganda and other activities of Franco agents aroused friction and hostility in a number of the Latin American countries. Their efforts received a major setback when all of the Central American and Caribbean republics followed the United States into the war against the Axis, and when most of the South American republics prepared to sever relations with Germany, Italy, and Japan (see PAN AMERICANISM). Pro-Franco Spaniards were rounded up in Panama, and measures to curb their propagandist activities were taken in Cuba, Mexico, and many other Latin American republics. See ARGENTINA under *History* for economic accords with Spain.

In April and during other periods of Axis military successes, the Falangist organ *Arriba* adopted an openly threatening attitude toward Portugal, declaring that the Lisbon Government must choose between Britain and Spain. This campaign was resented in Brazil as well as in Portugal, and contributed to the hardening of Brazilian opinion in opposition to the Axis.

Vatican Accord. The controversy with the Vatican over the right to appoint the higher Spanish clergy was finally settled in 1941, after it had deadlocked negotiations for a concordat since 1939. The right to appoint Spanish bishops, previously enjoyed by the Crown, had reverted to the Vatican when the Spanish Republican Government denounced the concordat in 1931. The Franco Government's insistence upon its right to name the bishops was resisted by the Pope. A compromise agreement was signed by the Papal Nuncio in Madrid on June 7. The Spanish Government was authorized to nominate six or more candidates for each vacant bishopric or archbishopric. The Vatican was then to select three of the nominees and the Government in turn was to pick one out of the three for the position. The Vatican, however, was free to reject any Government nominee and to propose candidates not on the Government's original list. The Government could reject any of the Vatican's nominees on grounds of "general political policy," subject to negotiation.

Other provisions of the accord of June 7 bound the Government to open negotiations at once for a new concordat in line with Spain's "traditional

Catholicism." Meanwhile the state undertook to respect the first four articles of the concordat of 1851. These articles recognized Roman Catholicism as the sole state religion, conferred upon it extensive rights and privileges, authorized the bishops to supervise religious education in all educational institutions, and recognized the co-jurisdiction of the canon law in such matters as will and testament. The question of control over the religious orders remained to be settled, but already the Church had won from the Franco regime greater privileges than those accorded it under the monarchy.

The basic antagonism between the Church and the radical Fascist section of the Falange Española remained. In mid-August it was reported that General Franco ordered the deportation of Cardinal Segura y Saenz, former Primate of the Spanish Church, for presiding at a religious conference in Seville Cathedral at which the Government's policies were criticized. On November 3 General Franco named Bishop Enrique Pla y Deniel of Salamanca as Cardinal Primate of Spain with the approval of the Vatican. Early in December it was announced that Franco had rescinded his ban against the return of Cardinal Vidal y Barraquer from Rome to Spain. The Cardinal was exiled for refusing to support General Franco and the Falangist movement during the civil war.

Political Trends. In addition to his difficulties with the Church, General Franco faced a challenge to his leadership from the rabidly pro-Axis Fascists of the Falange Española, led by his brother-in-law, Serrano Suñer. Early in the year some of the younger members of the Falange demanded that the party take over complete control of the state. A concession was obtained March 5 in the form of a decree exempting members of the Falange National Council from liability to arrest or prosecution except on orders of the Chief of State or the Foreign Minister. This placed the Falange in the same privileged position as the Church and the army. A subsequent decree of May 4 exempted Falange newspapers from government censorship.

During April Serrano Suñer and the Falange radicals joined in the Axis pressure designed to force Spain into the World War. Franco attempted to halt this trend by a thorough shake-up of the Government and party officials, which began May 6 with the appointment of a new Chief of Staff and of Franco's intimate friend, Col. Valentin Galarza Morante, as Minister of Government, a post controlling the police and all communication facilities. On May 9 Franco dismissed the Chief of the National Police and civil governors of five provinces, while his new Minister of Government annulled the decree exempting Falange organs from censorship. Nine of the highest army commanders were replaced May 12, with friends of Franco and former monarchists supplanting pro-Axis officers.

Two influential pro-Axis propaganda officials were dismissed May 18. But the following day General Franco suddenly reversed his policy. Commencing with a reorganization of his Cabinet on May 19, he restored the influence of the radical wing of the Falange party. On May 21 the Falange was placed in complete control of newspapers, magazines, radio, moving pictures, and all other propaganda agencies in Spain. This turnabout was generally attributed to pressure exerted by Germany and Italy. It greatly strengthened the power of Foreign Minister Serrano Suñer.

Yet Franco refused to yield completely to the demands of the pro-Axis Falangists. This was indicated by the reported arrest of some of their most

prominent leaders late in August on charges of conspiring to assassinate him. On October 15 Franco pardoned 26 members of the Falange against whom disciplinary action had been taken. The Falange propaganda and press service was "reorganized" at the same time. A sweeping purge of the Falange was ordered by the party's secretary-general on November 20.

Agitation for Monarchy. Continuing disunity within the Franco regime lent encouragement to the campaign for restoration of the monarchy. This movement gained support not only from monarchists, Catholics, and many staunch supporters of the Franco dictatorship but also from some of the Spanish republicans at home and abroad. Gen. José Pozas, former republican minister of the Interior, announced in Mexico City February 14 that republican and monarchist groups were discussing joint action to replace the Franco dictatorship with either a conservative republican regime or a Bourbon monarchy.

These developments lent importance to a proclamation signed by ex-King Alfonso XIII in Rome two weeks before he died of angina pectoris on February 28 (see *NECROLOGY*). The proclamation designated his third son, Prince Juan, as his successor to the Spanish throne. On Apr. 14, 1931, Alfonso had suspended the exercise of his royal powers to avoid civil war but had refused to abdicate. His death brought expressions of condolence from General Franco, the Spanish Government, the various Spanish monarchist groups, and from 25 exiled republicans in Marseille, France.

The body was interred in the Spanish Church of Monserrat, Rome, but the Franco Government announced that permission had been granted for the transfer of his remains to the royal pantheon in the Escorial near Madrid. Franco ordered three days of mourning for the dead ruler and state memorial services were held in Madrid. The Chief of State was believed receptive to the early restoration of the monarchy, although this was opposed by the powerful majority Fascist wing of the Falange party. Some Falangists accompanied 200 leading Spanish monarchists to Rome where they were addressed by Don Juan on March 7. He assured them that whenever Spain deemed it opportune to restore the traditional monarchy, he would be ready to "take over such responsibilities without disturbing the present unity, destiny, and historic continuity of the nation." Opposition to Don Juan's enthronement was anticipated from the Axis powers, as he was a descendant of Queen Victoria of Great Britain on his mother's side and was educated in England.

Treatment of Opposition. Many Spaniards turned to the proposed restoration of the monarchy as the sole hope of bridging the deep gulf that had separated republicans and nationalists since before the outbreak of the civil war. The Franco regime had concentrated its efforts upon extirpating the defeated republicans at the conclusion of the civil conflict rather than on conciliatory measures. During 1941 the courts continued to mete out drastic punishment to opponents of the Government. A decree of January 5 ordered punishment by military tribunals for all acts of disobedience, negligence, or noncompliance with Government orders in virtually every sphere of activity. To curb the numerous railroad wrecks, summary courts martial were empowered to impose the death sentence immediately on railwaymen convicted of extreme carelessness.

On April 1, second anniversary of the collapse of the republic, Franco extended conditional amnesty to some 30,000 persons convicted of "crimi-

nal activity" in connection with the civil war and sentenced to 12 years or less imprisonment. Another decree of September 5 provided for speedier trials and other safeguards for arrested persons. Military courts were to review the cases of all persons held more than six months without trial. This aroused hope of early liberation of some 300,000 persons who had been awaiting trial in prisons and concentration camps since the civil war. The Cabinet on October 17 granted conditional freedom to 2,624 political prisoners and exiled 332 others. On November 9 2,476 more political prisoners were given conditional liberty.

In contrast with these conciliatory measures, five Republicans convicted of civil war assassinations were executed in Toledo April 9. A decree of April 11 provided for stiff prison terms and even the death penalty for anti-Government activities ranging from rumor-spreading to attacks on state functionaries. Seven high officials of the republic, including Foreign Minister Julio Alvarez del Vayo, were exiled for 15 years and fined sums ranging from 10,000,000 to 25,000,000 pesetas by the Madrid Court of Political Responsibilities on April 21. The same court on May 29 exiled the former President of Spain, Niceto Alcalá Zamora, for 15 years, ordered him to pay his "entire fortune" of 50,000,000 pesetas as a fine, and urged the Government to deprive him of citizenship.

Similar sentences were imposed September 18 on the former republican Premier, Juan Negrin, who was in Mexico, and on Luis Jimenez de Asua, former vice-president of the Cortes. The Tribunal for the Repression of Masonry and Communism on September 30 sentenced in absentia Negrin, Alvarez del Vayo, and seven other prominent republican leaders to 30 years imprisonment and loss of all civil and political rights. Lesser courts sentenced thousands of persons to labor gangs for the illegal sale of foodstuffs and other minor offenses.

Other Events. The hurricane that swept across Portugal into Northern Spain on February 15-16 (see *PORTUGAL* under *History*) caused considerable loss of life and heavy damage to crops and real properties in Spain. Lashed by the high wind, a great fire burnt the central portion of the city of Santander and forced an estimated 30,000 persons to flee from their homes. Relief was rushed to Santander by German military forces in Southern France, by the Spanish Government, and by the American Red Cross. On March 14 the explosion of a powder warehouse wrecked the Santa Barbara suburb of Seville, killed more than 17 persons, injured about 500, and left 3,000 homeless.

The food shortage and lack of hygiene produced a minor typhus outbreak in Madrid in March, which spread to other districts. In curbing the disease, officials took drastic measures to banish the numerous beggars roaming the streets of the capital. With the coming of warm weather, the disease disappeared. Price inflation developed rapidly during 1941, increasing the misery of the poor. However food, clothing, and luxuries remained readily available for the rich. Unemployment was widespread in December, despite larger yields of the principal farm crops. Highway transportation and many industries dependent upon imports were less active than in 1940.

The State continued its efforts to regulate and control all economic activities along totalitarian lines. A decree of June 23 authorized formation of 24 national syndicates, embracing all productive, processing, and service activities, but excluding syndicates of labor and professional men. A law of September 25 created a National Institute for In-

dustry to promote and finance new industrial enterprises, especially those connected with national defense or designed to further Spanish autarchy. Various laws and decrees were issued for the control of wages, prices, and distribution. The Government in September centralized its control over all agricultural associations, cooperatives, and syndicates in an effort to encourage production. On September 17 state control was established over all metal mines. Marriage loans and other financial incentives to an increase in the population were made available beginning in March. The Government at the same time took steps to discourage birth control.

See ARGENTINA, GERMANY, GREAT BRITAIN, and ITALY, under *History*; CHEMISTRY, INDUSTRIAL; DAMS; LABOR CONDITIONS under *Health and Safety*; NAVAL PROGRESS, PORTS AND HARBORS; ROMAN CATHOLIC CHURCH; WORLD WAR.

SPANISH-AMERICAN LITERATURES. World conditions have made it more difficult than ever to assemble materials for such articles as these. Consequently this presentation of the year's activities must not be taken as exhaustive, nor must the omission of any country from this account be considered as evidence that it was nonproductive in 1941.

The following works are of general interest: Samuel Guy Inman, *El destino de la América Latina* (translation of the author's *Latin America's Place in World Life*), few persons know so intimately, from both sides, the Pan American problem; *Antología de la poesía española contemporánea* (1900-1936), selections, prologue, and notes by Juan José Domenchina, with an epilogue, by the Spanish critic, E. Díez-Canedo; Raymond L. Grismer, *A New Bibliography of the Literatures of Spain and Spanish-America*, vols. i and ii (Aa-Ans, Ant-Azz).

Argentina. Of the materials that have come to hand, the field of fiction shows the heaviest contributions, with erudition in second place.

Drama. Abel Luis Novillo, *Lo más fuerte* (genial idea, daring thought, reasonable conception of social ethics, and profound moral sense—the new dramatist gives much promise); Samuel Eichelbaum, *Vergüenza de querer* and *Divorcio nupcial* (two splendid psychological studies of marital love).

Versé. Eleuterio F. Tiscornia, *Poetas gauchescos*, an anthology, by one who knows his gauchos; César Fernández Moreno (son of Fernández Moreno), *Gallo Ciego*, awarded the Municipal Prize; Horacio Rega Molina, *Oda Provincial*, the initial volume of a series; Mario Binetti, *La sombra buena*, 35 exquisite sonnets, and a number of *canciones* of dignified, homelike humility; Antonio de la Torre, *Coplas*, elegiac poems of Cuyo, in the Andes; Ricardo Pose, *Estampas y Poemas de la Escuela*, an unusual book of ideal relationships between teacher and pupil.

Erudition. *Sustancia, Revista de Cultura Superior*, Nos. 6, 7-8 (March and September 1941) fully justify the title. Nos. 7-8 contain a symposium of articles, by eleven scholars, about Bergson, who died Jan. 4, 1941, with a supplementary detailed Bergson bibliography. Carlos V. Videla Rivero has written *Compendio de Historia Argentina*, a fine book to place in the hands of adolescents, since its treatment of vexing problems between the United States and certain other countries is unusually well-informed and fair. Other books are: Antonio Eleas, *Divagaciones lingüísticas—en el dominio del castellano*, a keen, philosophical study of language, by the author of *El Alfabeto*, 1925, and *El Vasco*, 1935; Juan Pinto, *Panorama de la literatura argen-*

tina contemporánea, limited to the past 40 years; Ernesto Nelson, *Algunos puntos básicos para la reforma de la enseñanza media*, a profound work by a scholar with a vast international background who has long been Inspector General of secondary and special education throughout Argentina; Dr. Alejandro Raitzen, *Cultura, carácter, conducta*, a forceful psychological study of the problem of world leadership being transferred from Europe to America; Marcos M. Blanco, *El vuelco del mundo*, a plea for a purified democracy somewhat along the lines of Rodó's *Ariel*; a Berenguer Carisomo, *Las máscaras de Federico García Lorca*, and *Mérimée y su teatro de Clara Gazul*, two careful studies that have aroused both praise and criticism.

Fiction. Enrique Campos Menéndez, *Kupen*, eight thrilling stories dealing with Tierra del Fuego by the so-called "Kipling of the Argentine"; Renata Dongli Halperin, *El sol sobre las manos*, a well-received novel of humble folk, Juan Draghi Lucero, *Las mil y una noches argentinas*, folk-tales of Cuyo in the Andes; Pablo Rojas Paz, *El patio de la noche*, strong, beautiful narrations, Arturo Gimenez Pastor, *Figuras a la distancia*, a fine book of evocations of the end of the nineteenth century in Buenos Aires, Uruguay, and Chile, Bernardo Verbitsky, *Es difícil empezar a vivir*, Primer Premio del Concurso Ricardo Güiraldes de Novelas; J. Carlos Onetti, *Tierra de nadie*, Segundo Premio del Concurso Ricardo Güiraldes de Novelas; Enrique Amorim, *El caballo y su sombra*, a powerful picture of country life in Uruguay.

Bolivia. The only volume received is by Manuel Frontaura Argandona, *El Precursor*, the romantic story of Joseph Alonso Ibáñez and the founding of Potosí.

Chile. Versé. Juan Guzmán Cruchaga, *Aventura*, the author of *Junto al brasero*, *Chopin*, and *Lejana* gives us a new book of pure lyricism.

Erudition. Ricardo Puelma L., *Arenas del Mapocho: A Santiago de Chile en su IV centenario, 12 de Febrero de 1541-12 de Febrero de 1941*, highly praised by criollo critics; Benjamín Subercaseaux, *Chile o una loca geografía*, an important study of Chilean geography illustrated by Nemesio Antúnez Zañartu; Roberto Peragallo, *Por España* (prologue by Pedro Lira Urqueta) a collection of several discourses assembled in connection with the 400th anniversary of the founding of Santiago, by a member of the Academia Chilena de la Lengua who is also Ministro de la Corte Suprema de Justicia; Tomás Thayer Ojeda, *Formación de la Sociedad Chilena, y Censo de la Población de Chile en los años de 1540 a 1565, con datos estadísticos, biográficos, étnicos, y demográficos, Tomo II, Parte biográfica*, alphabetically arranged by family names, and treating in this volume Chile's early names from Gaitán de Mendoza (Juan) to Oyarzún (Juanes de); Lord Cochrane, *Memorias*, reminiscences of a noble Scot, who fought for the republics of the Andes; O'Higgins pintado por sí mismo, with a prologue by the Peruvian Luis Alberto Sánchez, and notes by various scholars.

Fiction. Macedonio Fernández, *Una novela que comienza*, a contribution to Spanish-American symbolism.

Colombia. Little has reached us from Colombia, but that little is well worth while.

Versé. Antonio Gómez Restrepo, secretary of the Academia Colombiana de la Lengua, *Poesías, Publicaciones de la Academia Colombiana, Tomo I*, a collection of the poetic works of the prince of Colombian literary criticism, by Padre José J. Ortega.

Erudition. José María Ots Capdequí, *Estudios de*

historia del Derecho Español en las Indias, a documented study of the history of Spanish Law in the Indies, by a Spanish legal authority now holding a chair in the University of Bogotá; Manuel José Forero, *Santander, Prócer de la Independencia Nacional*, published by the Ministry of National Education for placement in the hands of all youth of grade-school age; B. Matos Hurtado, *Perfiles de Santander, y un diario inédito de su enfermedad y muerte*.

Costa Rica. M. B. MacDonald and D. MacLaughlin, *Vida y Obras de Autores de Costa Rica*, a useful reference work.

Cuba. *Erudition* outstripped all other genres in the materials that have reached us. Gilberto González y Contreras, *Rubén Romero, el hombre que supo ver*, a study of one of the outstanding litterateurs of the Mexican revolutionary period; Fermín Peraza Sarausa, *Anuario Bibliográfico Cubano, 1940*, fifth number of annual bibliography; Cosme de la Torriente, *Cuarenta años de mi vida*, by a Cuban patriot who has spent long years in the service of his country; J. J. Remos, *Hombres de Cuba*, penetrating essays on several Cuban celebrities; José Martí, *Antología familiar, Cuadernos de cultura*, a collection of varied prose and verse, and letters to family and friends by this patriot; José Martí, *Diario de Martí, de Cabo Haitiano a Dos Ríos, 9 de Abril a Mayo 17, 1895*, republished for free distribution in public and private cultural centers of the nation. *Vida y Obras de Autores Cubanos, Revista Cubana* (enero-junio, 1941—vol. 15), by R. L. Grismer and M. R. Saavedra, is a very meaty number, and does credit to the Ministerio de Educación and the Dirección de Cultura which produce it. *Academia Nacional de Artes y Letras*, has renewed publication and Años XXIV and XXV (tomo XXI, julio 1928—junio 1940) have already appeared, containing much important material.

Fiction. Flora Díaz Parrado: *Cinco Cuentos y "El Velorio de Pura."* Dr. Díaz is one of the outstanding women of Cuba, the only one ever to have held the post of *Chargé d'Affaires* in France and who now holds the title of Secretary of Legation. Her book serves not merely as entertainment, but also as enlightenment on certain aspects of Cuban life today.

Drama. José Antonio Ramos, *El Traidor, La Leyenda de las Estrellas, La Recurva*, three of his best works for the stage.

Verso. In the *Revista Americana de Buenos Aires*, Amparo Rodríguez Vidal, the Cuban poetess, has published a *Canto a América*, and a series of articles on *Poetisas Norteamericanas*, which are affectionate treatments of our women poets.

Dominican Republic. The Dominican Republic was very active in matters of erudition and in the activities of the Dominican Academy of History.

Erudition. Fermín Peraza Sarausa y Alfredo del Valle, *Bibliotecas, Archivo y Museo de la República Dominicana*, a study of library facilities in the Dominican Republic; Sócrates Nolasco, *Viejas Memorias*, interesting historical articles on personages and incidents of the entire island—Haiti and the Dominican Republic; Erwin Walter Palm, *Ecos de Arquitectura Clásica en el Nuevo Mundo* [publicaciones de la Universidad de Santo Domingo, vol. xv]. Dr. Gordon Ireland, *Cursillo de Derecho Constitucional Americano Comparado* [publicaciones de la Universidad de Santo Domingo, vol. xiv], a careful analysis of the Constitutional law of England and the United States, and of the general Constitutions of Latin America; Max Henriquez Ureña, *Episodios dominicanos—La Conspiración de los Alcarrizos* (vol. 2 of the *Episodios dominicanos*,

the first volume of which is entitled *La Independencia Efímera*, which appeared in 1938).

Ecuador. From Ecuador we have received the following two books, one a bit of fiction and the other a study about fiction. The first is by Enrique Gil Gilbert, *Nuestro pan*, awarded honorable mention by the International Committee in a prize contest for unpublished novels by Latin-American authors (see details under *Peru*), and the second by Alejandro Andrade Coello, *La novela en América*, a good study.

Guatemala. We have received three volumes of erudition and one of verse.

Erudition. José Arzú, *Pepe Batres Intimo, su familia, su correspondencia, sus papeles*, a biographical and literary study by a relative who has in his possession the most exact facts and the most abundant collection of family papers; Juan M. Mendoza, *Enrique Gómez Carrillo (estudio crítico biográfico)*, two volumes, treats his life, works, and epoch; Luis Cardoza y Aragón, *La nube y el reloj, pintura mexicana contemporánea*, a fine study of Mexican art by a Guatemalan author who has lived out of Guatemala since 1920, contains 135 full-page illustrations).

Verso. José Batres Montuza, *Poesías* (11th ed. with notes by Adrián Recinos); his verse is so popular that frequent new editions are necessary.

Mexico. Mexico likewise has shown greater activity in erudition than in other genres.

Fiction. The same prize contest mentioned under *Peru* in this review, was patronized in Mexico by the Ministry of Public Education and the Monthly Review *Letras de México*, and attracted 34 original works. The judges were Alfonso Reyes, Octavio Bareda, G. Fernández MacGregor, Julio Jiménez Rueda, and Alfonso Teja Zabre. The Ministry of Public Education stimulated additional local interest in the contest by granting three national premiums of 5,000, 3,000, and 2,000 pesos. The jury awarded the first prize to *Nayar* by Miguel Ángel Menéndez, presented under the pen-name of Manuel Briseño. Although he did not win the prize in the international contest, the fact that he earned one of the three "honorable mentions" proves that he wrote one of the best four novels produced in that year throughout Hispanic America. His story is woven out of material gathered in his long residence in the regions of Nayarit, whence the title *Nayar*.

The second prize was awarded to *A los cuatro vientos*, by Gregorio López y Fuentes, and the third prize to *En la rosa de los vientos* by José Mancisidor.

Verso. Manuel Maples Arce, *Antología de la poesía mexicana moderna*, completes the beautiful anthology of Genaro Estrada of twenty years ago; Alfonso Reyes, *Algunos poemas*, a new volume of hitherto unpublished verse, written 1925–1930; and *Villa de Unión* (4 de julio de 1880), a romance, historical and personal; Enrique González Martínez, *Poemas 1939–40*, eight poems by the man who has been hailed as Mexico's greatest living poet.

Erudition. Santiago Hernández Ruiz and Domingo Tirado Benedi, *La ciencia de la educación*, vol. II of a monumental work concerning pedagogical ideas of 106 mentors from Socrates to the present; José de Acosta, *Historia natural y moral de la literatura mexicana desde los orígenes hasta nuestros días*, enlarged and corrected edition of the best outline of Mexican literature thus far published; Toribio Esquivel Obregón, *Biografía de don Francisco Javier Gamboa*, an exposition of the political philosophy of New Spain in the 18th century; Máximo Gómez y Báez, *Diario de campaña, 1868–1898*,

edited by an especially appointed committee; César Lizardi Ramos, editor, *Los Mayas antiguos*, the discussions of a group of specialists in archaeology and ethnology; Alfonso Reyes, *Pasado inmediato*, essays on Latin America by one of Mexico's foremost diplomats; *The Continental Doctrine in the Mexican Senate*, Manuel Ávila Camacho, Ezequiel Padilla, Josephus Daniels, Luis Sánchez Pontón, Jaime Torres Bodet, Pan American Day Addresses in Mexico, April 14, 1941.

Panamá. Rodrigo Miró, *Índice de la poesía panameña contemporánea*, an anthology with short biographical sketches.

Perú. Fiction and erudition about divided the honors in the production of 1941.

Erudition. José Jiménez Borja, *Cien años de literatura y otros estudios críticos*, interesting light on the development of Peruvian literature; Víctor Andrés Belaúnde, *La crisis presente, 1914-1939*—of the *Obras Completas* of the author (celebrated university professor, publicist, man-of-letters, and diplomat) this is the first volume in the *Serie Peruana*; José de la Riva Agüero, *Homenaje al Conquistador del Perú y Fundador de Lima, D. Francisco Pizarro* (appeared in the folleto conmemorativo de la Academia Peruana).

Fiction. Farrar and Rinehart, Inc., New York, in collaboration with the Division of Intellectual Cooperation of the Pan American Union, sponsored, early in 1940, a prize contest for unpublished novels by Latin American authors. Eligible manuscripts (not less than 50,000 words) were submitted before Nov. 15, 1940, to juries selected in each respective country. The winning selections were then sent to an international jury, composed of John Dos Passos and Blair Niles, of the United States, and Ernesto Montenegro, of Chile. Every Latin-American country participated, except Uruguay. More than one hundred novels were submitted, and, of these, twenty-seven were sent to the New York Committee. The award was made to Ciro Alegria for the novel, *El mundo es ancho y ajeno*. Alegria, a young man of thirty-two, from Trujillo, Peru, who has lived in Chile as a political exile since 1934, receives from Farrar and Rinehart \$1,000; from the London firm of Nicholson and Watson \$500 for British rights, from *Red Book Magazine* \$1,000, as an option for serial rights, to which will be added \$4,000 if this magazine publishes it. Furthermore Farrar and Rinehart will pay the usual royalties if the book reaches a stipulated sale, and will arrange for translation into English without cost to the author. The unusual merits of the manuscripts submitted caused the international jury to make honorable mention of three others: *Nuestro pan*, by Enrique Gil Gilbert, of Ecuador; *A Fogueta*, by Cecilio J. Carneira, of Brazil; and *Nayar*, by Miguel Angel Menéndez, of Mexico. Another Peruvian novel by Ricardo Palma, was *Tradiciones peruanas escogidas*, the first volume in the "Serie América" in the *Biblioteca Amauta*, selected, prologue, and annotated by Luis Alberto Sanchez, editor of the new series.

The *Academia Peruana de la Lengua, Correspondiente de la Española*, directed by José de la Riva Agüero, has been reorganized this year. It has completed its personnel by electing nine new academicians and by celebrating several public and solemn sessions.

Puerto Rico. *Verse.* R. Negrón Flores, *Del Amor a la Locura*, includes the tragic love story of Carmen Echevarría and the poet José de Diego, with his poem *A Laura*, and a poem by Diego placed in Carmen's mouth, *La Oración de Laura*; and *El Cristo de los Andes* a beautiful poem concerning

the history of that statue and its importance in the peaceful relations between Chile and Argentina; José Antonio Dávila, *Vendimia*, published by the Biblioteca del Ateneo Puertorriqueño.

Erudition. Concha Meléndez, professor of Spanish in the University of Puerto Rico and author of *Amado Nervo* (1926), and several other important works, has given us a very attractive, warm-hearted account of her visit to Peru after much reading of Spanish Literature, *Entrada en el Perú*; R. L. Grismer and C. I. Arroyo, *Vida y Obras de Autores Puertorriqueños*, a useful reference work.

Venezuela. **Erudition.** Bernardo Suárez, *La Venezuela de hoy y su actual gobierno*, a critical exposition of the achievement of four years under the rule of President Lopez Contreras; Alejandro de Humboldt, *Viaje a las regiones equinocciales del Nuevo Continente*, vols. i, ii, and iii, an important work put out by the Ministry of Education; Casto Fulgencio López, *La Guaira*, an account of its part in the wars for independence. The editorial "Cecilio Acosta" under the directorship of J. A. Cova has published a *Biblioteca de Escritores Venezolanos* in which several volumes have appeared, the latest of which is Mariano Picón-Salas, *Formación y Proceso de la Literatura Venezolana*, an important study, despite its brevity.

Fiction. Arturo Uslar Pietri and Julián Padrón, *Antología del cuento moderno venezolano* (Biblioteca venezolana de cultura, 2 vols.), a valuable collection of tales selected by the Minister of Education and the President of the Association of Venezuelan writers.

Drama. Eduardo Innes-González, *La Virgen del Carmen and Vivir para los demás*, two native Venezuelan comedies.

Venezuela suffered a severe literary loss in the death of one of her most versatile citizens, Francisco Antonio Rísquez (see under **NECROLOGY**)

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SPANISH GUINEA. See **SPAIN** under *Colonial Empire*.

SPANISH LITERATURE. The Spanish Government has reorganized all of the scholarly activities of Spain. The Junta Para Ampliación de Estudios and the Fundación Nacional de Investigaciones Científicas and all other similar organizations of prewar days have been merged under the title of Consejo Superior de Investigaciones Científicas. This body has reorganized research under *patronatos* and *institutos*, according to the subject of investigation. The headquarters are in the building formerly occupied by the Junta Para Ampliación de Estudios, Calle de Medinaceli 4, Madrid, Spain. The Consejo Ejecutivo is composed of President, José Ibáñez Martín, Minister of Education; First Vice-President, Miguel Asín Palacios; Second Vice-President, Antonio de Gregorio Rocabalano; Secretary, José M. Albarreda y Herrera. It will have the power to give scholarships and fellowships and to designate the persons who are to collaborate in the research in the foreign research centers. It will also attempt to systematize the scholarly publications of Spain. All of this will be carried on through *patronatos* which will coordinate the work of the numerous private and public research institutions.

Under the *patronato* Marcelino Menéndez y Pelayo are grouped the *institutos* devoted to philology, Arabic and Hebrew studies, history, Hispano-American history, art and archeology, and geography. The Instituto Antonio de Nebrija is especially devoted to philology. Its organ is the quarterly *Revista de Filología Española*. In the field of belles-lettres these organizations have al-

ready begun to produce valuable material. They have renewed the publication of the *Revista de Filología Española*; volume 25, No. 1 appeared in 1941 and will be continued. The Consejo has produced five volumes of the complete works of Menéndez y Pelayo, which began with his *Historia de las Ideas Estéticas de España*, revised and checked by Enrique Sánchez Reyes, director of the Biblioteca Menéndez Pelayo. Other publications by the Consejo are: *Anales del Jardín Botánico de Madrid*; tomo I—Año 1940 (appeared in 1941); *Revista de Bibliografía Nacional*, tomo I, Madrid, 1940; Enrique Lafuente Ferrari, *El Vitrey Iturrigaray y los Orígenes de la Independencia de México* (prologue by Antonio Ballesteros Berreta); Álvaro de Toledo, *Comentario al "De Substantia Orbis" de Averroes* (aristotelismo y averroísmo) edited and annotated by Manuel Alonso, S.J.; Carmen Fontecha, *Glosario de Voces Comentadas en Ediciones de Textos Clásicos*, Ramón Ceñal Lorente, S.J., *La Teoría del Lenguaje de Carlos Bühler*; José Pérez de Barradas, *La Familia*; Karl Vossler, *Filosofía del Lenguaje—Ensayos—traducción de A. A. y R. L.*, the publication of volume 7 of *Emerita (Boletín de Lingüística y Filología Clásica)*; Miguel Asín Palacios, *Contribución a la Toponimia Árabe de España*; Lope de Vega, *Santiago el Verde* (Teatro Antiguo Español, textos y estudios, IX, ed. by Ruth Annclise Oppenheimer); and Cristóbal Bermúdez Plata, *Catálogo de Pasajeros a Indias, Durante los Siglos XVI, XVII, y XVIII*, vol. i (1509-1534).

Another important work is published by the Consejo Superior, through the Patronato "Menéndez y Pelayo," through its Instituto "Gonzalo Fernández de Oviedo": *Historia Verdadera de la Conquista de la Nueva España* por Bernal Díaz del Castillo, Edición Crítica, Tomo I. It brings the readings of a hitherto unused manuscript called "Alegria" in the notes. The second volume will be directed by Carlos Pereyra, and will contain a series of critical studies concerning the life of the author and various aspects of his work.

Other works that have reached us are: Manuel Machado, *Poesía (Opera Omnia Lírica)*; Ricardo del Arco, *Fernando, El Católico, (Artífice de la España Imperial)*, (an attempt to show that Fernando was of greater importance than is usually acknowledged); C. Benítez de Castro, "*Se Ha Ocupado el Kilometro 6 . . .*," 2d. ed., a novel of the battle of the Ebro River from the point of view of one who took part in it and as an answer to Remarque's *All Quiet Along the Western Front*, and *El Creador* (the young author is already being hailed as one of the most original and sturdy representatives of modern novelists): Francisco Camba, *Madridgrado* (Documental Film), 2d. ed.; Francisco de Cossillo, *Taxímetro* (a delicate psychological study that will stand out among the products of the moment for the modernity, mental agility, and narrative control with which it is built); W. Fernández Flórez has produced three books; *Las Siete Columnas*, *La Novela Número 13*, and *Una Isla en el Mar Rojo*, 8th ed.; Fray Justo Pérez de Urbel, *San Isidro de Sevilla, Su Vida, Su Obra, y Su Tiempo*, a new study of the great humanist, illustrated with sixteen photographs; Mariano Puigdollers Oliver, *La Filosofía Española de Luis Vives*; Agustín de Foxá, *Madrid de Corte a Checa*, 2d. ed., corrected and enlarged, vol. i, of a series of *Episodios Nacionales*, by the Conde de Foxá; Azorín, *Valencia* and *Madrid*, (two new volumes for *La Biblioteca Nueva*).

Of the numerous volumes that have appeared in *Clásicos—Ebro*, in convenient format and good

type, five have reached us: Santa Teresa de Jesús, *Prosa Escogida*; Don Juan Manuel, *El Conde Lucanor* (selección); Tirso de Molina, *El Condenado por Desconfiado*; Cervantes, *Rinconete y La Ilustre Fregona*; and *Vida del Lazarillo de Tormes*.

The Patronato de la Biblioteca Nacional has published *Lista de Obras Ingresadas en la Biblioteca Nacional desde la liberación de Madrid hasta 1940* (the volume contains 256 pages and represents the works they have received since the close of the civil war).

In addition to the foregoing matters we have the following from Spain.

Erudition. Salvador de Madariaga, *Hernán Cortés* (2d of a series of excellent biographies of outstanding Spanish personalities, heavily annotated, and having a long *Índice General* and an *Índice Especial sobre Hernán Cortés*); Angel González Palencia, *Estudio histórico sobre La Censura Gubernativa en España, 1800-1833*, 3 vols. (monumental work divided into 54 subdivisions of genres running consecutively through the three volumes, and each work that was submitted to examination is numbered consecutively up to 734; Marqués de Lozoya, *Historia del arte hispánico*, Tomo III (542 pages, 548 illustrations, 32 full-page and in brilliant coloring; each volume of the series complete in itself, this one deals with the Renaissance and is very important); Roque Barcia, *Sinónimos Castellanos* (new, enlarged edition with better mechanical arrangement for easier reference), Juan Hurtado y J. de la Serna and A. González Palencia, *Historia de la literatura española* (fourth ed. revised and enlarged, 2 vols.); Ramón Menéndez Pidal, *Manual de gramática histórica española* (6th ed. revised and enlarged,—a standard work, very welcome in this latest edition).

Drama. José María Pemán, *La Santa Virreina* (poema dramático), first staged in Palma de Mallorca, by the Company of María Guerro and Fernando Díaz de Mendoza (very careful study of a Peruvian legend in the 17th century when the Condesa de Chinchón was Vicereine; the legend is connected with the discovery of quinine in Peru), Ramón J. Sender, *Hernán Cortés* (heroic drama).

Verso. Pedro Salinas, *Literatura española, siglo XX* (work of great importance—despite certain criticisms—for study of the complex literary movement of the early years of this century).

Fiction. Ramón J. Sender, *Mexicayótl* (a story of pre-Columbian Mexico).

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SPANISH MOROCCO. See MOROCCO; SPAIN under *Colonial Empire*; TANCIER under *History*.

SPIITSBERGEN. See SVALBARD.

SPORTS. Articles covering the activities in the various sports in 1941 will be found under such titles as BASEBALL; BOXING; FOOTBALL; GOLF; POLO; TENNIS; YACHTING, ETC.

SPORTSWEAR. See FASHION EVENTS.

SSB. See SOCIAL SECURITY BOARD.

STANDARD OIL COMPANY. See BOLIVIA under *History*.

STATE, U.S. Department of. The organization of the Department of State has been adapted in recent years to meet the changing needs created by new conditions and new emphases in international affairs.

When the outbreak of war in Europe became imminent, the Special Division was established to handle special problems arising out of the disturbed situation in Europe, such as the repatriation of American citizens from war areas and the repre-

sentation in belligerent countries of the interests of other belligerents taken over by the United States. Shortly thereafter, when the need became apparent for centralization of liaison between the Department of State and the War and Navy Departments, a Liaison Office was established to coordinate the exchange of information between the Department of State and the other two Departments. Subsequent changes provided for strengthened liaison with other Government agencies and for increased collaboration in the study of certain phases of the world situation.

In connection with the increased importance of the solidarity of the Western Hemisphere, three new offices have been created: the Division of Cultural Relations, which is charged with promoting intellectual and cultural interchange with foreign countries, particularly the other American republics; the Central Translating Office, which administers a program of translating American Government documents into Spanish, Portuguese, and French for distribution in the appropriate countries; and the Caribbean Office, which was charged by a Department order of Oct. 9, 1941, with jurisdiction over such aspects of the relations of the United States with the Caribbean area as have a bearing upon housing, health, education, agriculture, labor, finance, commerce, and similar social and economic fields.

In view of the importance of economic factors in the present international situation, the Department established in 1941 a Board of Economic Operations, consisting of two Assistant Secretaries of State, the Adviser on International Economic Affairs, and the chiefs of seven Divisions (five new and two already in existence) which are charged with handling such problems as those involved in tariff policies, exports and defense aid, trade with aliens inimical to the United States, and foreign-funds control.

As a result of the recent changes, the Department may be regarded as consisting of the following groups of officers and offices.

1. The Secretary of State, the Under Secretary of State, four Assistant Secretaries of State, a Legal Adviser, three Advisers on Political Relations, and an Adviser on International Economic Affairs, an Assistant to the Secretary of State and four Special Assistants to the Secretary of State; three Special Assistants to the Under Secretary of State, and a Liaison Office directly supervised by the Under Secretary.

2. Four divisions charged with responsibility for the relations of the United States with particular regions of the world, namely, the Divisions of the American Republics, of European Affairs, of Far Eastern Affairs, and of Near Eastern Affairs.

3. The following offices which are concerned with the personnel and phases of the activities of the Foreign Service: Division of Foreign Service Administration, Foreign Service Buildings Office, Foreign Service Officers' Training School, Board of Foreign Service Personnel, and Division of Foreign Service Personnel.

4. The Divisions of Commercial Policy and Agreements, of Defense Materials, of Exports and Defense Aid, of Studies and Statistics, and of World Trade Intelligence, and the Foreign Funds Control Division and the Financial Division, all of which function as component parts of the Board of Economic Operations.

5. Some twenty-odd technical, advisory, and administrative divisions and offices, as follows: Division of Accounts, Caribbean Office, Division of Commercial Affairs, Division of Communications and Records, Office of Coordination and Review, Division of Cultural Relations, Division of Current Information, Office of Fiscal and Budget Affairs, Division of Foreign Activity Correlation, Office of the Geographer, Division of International Communications, Division of International Conferences, Passport Division, Division of Personnel Supervision and Management, Office of Philippine Affairs, Division of Protocol, Division of Research and Publication Special Division, Division of Special Research, Translating Bureau, Central Translating Office, Treaty Division, Office of the Editor of the Treaties, Visa Division.

See PAN AMERICANISM; UNITED STATES; and the various foreign countries, under *History*.

STATE GUARD. See articles on States under *Legislation*.

STEEL. See IRON AND STEEL.

STERILITY. See ZOOLOGY, GENERAL.

STEROIDS. See BIOLOGICAL CHEMISTRY.

STOCK EXCHANGE, STOCK PRICES. See FINANCIAL REVIEW.

STORAGE AND WAREHOUSES. See DEFENSE TRANSPORTATION, OFFICE OF; TRANSPORTATION DIVISION.

STORMS. See HURRICANES; also, ASTRONOMY.

STRAITS SETTLEMENTS. See BRITISH MALAYA.

STRATEGIC AND CRITICAL MATERIALS. The commodities included under these two headings are those announced on Jan. 30, 1940, by the Army and Navy Munitions Board. Strategic materials, as defined by the Board, are "those essential to national defense, for the supply of which in war dependence must be placed in whole, or in substantial part, on sources outside the continental limits of the United States; and for which strict conservation and distribution control measures will be necessary." The list of strategic materials is: Abaca, antimony, activated carbon, chrome ore, ferromanganese, manganese ore, mercury, mica, nickel, quartz crystals, quinine sulphate, rubber, silk, tin, tungsten ore.

Critical materials are those "essential to national defense, the procurement problems of which in war would be less difficult than those of strategic materials either because they have a lesser degree of essentiality or are obtainable in more adequate quantities from domestic sources; and for which some degree of conservation and distribution control will be necessary." The critical materials are: Aluminum, asbestos, cork, graphite, hides and skins, iodine, kapok, opium, phenol, platinum, tanning material, tuluol, vanadium ore, wool.

The Bureau of Labor Statistics issues a weekly price index for the two groups, based on August, 1939, as 100. Prices of strategic materials jumped about 25 per cent within the first month after war broke out in 1939. Thereafter, relatively slight fluctuations occurred until February, 1941, when a steady increase began. The index at the beginning of March was 129.9; April, 136.0, May, 137.6; June, 138.4; July, 139.3; August, 141.7; September, 141.8; October, 142.4; November, 143.1, December, 143.0.

Prices of critical materials rose much less sharply, the increase being about 5 per cent during the first war month, September, 1939. The index at the beginning of 1941 was 111.3. At the beginning of April it was 112.3, June, 113.8, August, 115.4; September, 116.7; October, 117.4; November, 116.8; December, 116.8.

See CHEMISTRY, INDUSTRIAL; CUSTOMS, BUREAU OF, MINES, BUREAU OF; GEOLOGICAL SURVEY; SUPPLY PRIORITIES AND ALLOCATIONS BOARD; articles on the materials, as ALUMINUM, ANTIMONY, ASBESTOS, CHROMIUM, IRON AND STEEL, LEATHER, MANGANESE, MERCURY, NICKEL, PLATINUM, RUBBER, TEXTILES, TIN, TUNGSTEN, WOOL.

STRIKES. See LABOR CONDITIONS under *Strikes* and the topics there listed.

STUDENT AID. See NATIONAL YOUTH ADMINISTRATION; UNIVERSITIES AND COLLEGES.

SUB-CONTRACTING. See MACHINE BUILDING; MOTOR VEHICLES; PRODUCTION MANAGEMENT, OFFICE OF.

SUBMARINES. See NAVAL PROGRESS; WORLD WAR.

SUBVERSIVE ACTIVITIES. Compare ESPIONAGE; SABOTAGE.

SUBWAYS. See RAPID TRANSIT.

SUDAN. See ANGLO-EGYPTIAN SUDAN; FRENCH WEST AFRICA.

SUEZ CANAL. A sea-level canal across the Isthmus of Suez, connecting the Mediterranean and the Red Sea. Operated by the French-controlled Suez Canal Company, which holds a concession from the Egyptian Government, the canal is normally the main route between maritime Europe and the ports of the Indian and western Pacific oceans.

Cargo traffic on the canal declined from the peak of 36,491,332 net registered tons in the calendar year 1937 to 29,573,394 tons carried by 5,227 ships in 1939 (see YEAR BOOK for 1940 for further 1939 statistics). No official figures for traffic were issued after the outbreak of the World War in September, 1939. In January, 1941, German bombers sank several ships in the canal and reportedly blocked traffic completely until the hulks were moved out of the way. See GERMANY under *History*; WORLD WAR.

SUGAR. The sugar beet crop in the United States in 1941 was estimated by the U.S. Department of Agriculture at 10,090,000 tons of beets from 757,000 acres, expected to produce about 1,451,000 tons (equal to 1,552,570 raw ton value) of sugar, compared with the 12,292,000 tons of beets, 916,000 acres and 1,773,000 tons of sugar in 1940, and a 1930-39 average of 9,284,000 tons of beets from 815,000 acres and 1,363,000 tons of sugar. The acre yield was 13.3 tons versus 13.4 tons in 1940 and 11.4, the 10-year average. Thus, the reduced production in 1941 was entirely accounted for by a decline in acreage. Beet sugar production in leading States was estimated for California 311,000 short tons, Colorado 299,000, Michigan 151,000, Montana 120,000, Nebraska 116,000, and Idaho 105,000 tons.

Production of sugarcane for sugar in 1941 was marked again by an unfavorable season in Louisiana and a favorable outturn in Florida. The 1941 sugarcane crop of the two States, including cane for seed, was grown on 264,000 and 31,700 acres, respectively, and was estimated as 4,488,000 and 1,109,000 tons and equivalent to 318,000 and 113,000 tons of sugar. Molasses as a sugarcane byproduct totaled 31,933,000 gal. The sugarcane sirup produced in eight Southern States totaled 18,374,000 gal. and sorgo sirup made in 17 States amounted to 11,681,000 gal.

Maple products reported by 10 States included 2,091,000 gal of sirup and 489,000 lb. of maple sugar. The unusually low production of maple products in 1941 was due largely to the very short campaign in most States. The season opened somewhat late and closed rather abruptly.

Season average prices received by growers and values of production (marketing season or crop year) were respectively estimated for sugar beets \$6.22 per ton, \$62,747,000, sugarcane for sugar and seed \$3.62 per ton, \$20,242,000, maple sugar 29.7¢ per pound, \$145,000, and sugarcane sirup 59¢ per gallon, \$10,842,000; sorgo sirup 61.5¢, \$7,180,000, and maple sirup \$1.736 per gallon, \$3,631,000. A record quantity of 7,995,377 short tons of refined sugar was delivered to the American market by manufacturers and importers in 1941. The total did not include deliveries by mainland cane mills.

The world sugar production, according to the U.S. Department of Agriculture (*The World Sugar Situation*, June, 1941), rose from 1918 to 1930 to decline slightly during early depression years and then increased to a record high in 1936. Production declined slightly during 1937 and 1938 but reached a new record high level in 1939. A world output in 1940 almost as large as in 1939 was indicated, but there were definite dislocations as between coun-

tries. Production in the main importing countries rose steadily from 1918 to 1936, while in the major exporting countries production fluctuated widely but the general level remained below that of the late 1920's.

The world's cane-sugar production for the 1940-41 season, according to estimates of Willett and Gray issued Dec. 4, 1941, amounted to 19,262,153 tons. Production in leading world areas was for United States—Louisiana 210,229 tons, Florida 90,178, Puerto Rico 832,140, Virgin Islands 7,500, and Hawaii 865,000; Cuba 2,440,990; Jamaica 156,391; Dominican Republic 400,711; Mexico 320,000; Peru 460,000; Argentina 540,374; Brazil 1,272,405; British Guiana 190,000; British India, gur (low grade) 3,739,484, and white sugar 1,275,200; Java 1,750,000; Japan 980,544; Philippine Islands 1,028,354; Australia 808,000; Mauritius 316,250, Natal 511,607, and Egypt 175,000 tons. The world's beet-sugar production in 1940-41 was estimated to total 10,847,260 tons, including United States 1,575,423, Canada 95,350, Germany 2,342,000, Czechoslovakia 520,000, Poland 500,000, U.S.S.R. (Russia and Ukraine) 2,700,000, Great Britain 485,000 and Ireland 68,893, Italy 475,000, Sweden 300,000, France 238,000, Belgium 255,543, Netherlands 292,950, and Denmark 236,667 tons. The grand world total for 1940-41 was estimated at 30,109,400 tons compared to 30,498,810 tons in 1939-40 which comprised 19,377,407 tons of cane-sugar and 11,121,403 tons of beet-sugar. For sugar cane and beet insects, see ENTOMOLOGY, ECONOMIC.

SUICIDES. See VITAL STATISTICS.

SULFADIAZINE. See MEDICINE AND SURGERY under *Chemotherapy*.

SULFA-DRUGS, SULFONAMIDES. See BIOLOGICAL CHEMISTRY; FOOD AND DRUG ADMINISTRATION, MEDICINE AND SURGERY under *Chemotherapy*, VETERINARY MEDICINE

SULFATHIAZOLE. See FOOD AND DRUG ADMINISTRATION; MEDICINE AND SURGERY under *Chemotherapy*

SULPHUR. The United States has enough sulphur to meet all the demands of World War II. The year 1941 saw sulphur production break all previous records. Domestic deposits (principally in Texas and Louisiana) produced 3,139,253 long tons of crude sulphur in 1941, according to the U.S. Bureau of Mines. This was a 15 per cent increase over 2,732,088 long tons in 1940. Shipments for the year were approximately 3,401,410 long tons, compared with 2,558,742 in 1940. Above-ground stocks of mined sulphur totaled almost 4,200,000 tons even after the industry had fulfilled the demands of both civilian and military needs. Exports went chiefly to the various parts of the British Empire. Shipping by canal, river, and rail rose sharply to various inland and Canadian consumers. Exports of crude sulphur amounted to 474,551 long tons, for the period January-September, 1941, compared with 746,468 tons in the full year 1940. Exports of refined sulphur were 55,289,420 lb. for January-September, 1941, and 44,229,114 lb. for all of 1940. Sulphur imports were 20,954 long tons (January-September, 1941), chiefly from Canada. No sulphur ore was imported in 1941. The price remained unchanged throughout the year at \$16 f.o.b. mines, but the cost of transportation rose 200-300 per cent.

Sulphur is an important raw material in the manufacture of explosives and is used in the form of fuming sulphuric acid for this purpose. About 1,000 tons of acid a day were put into explosives in 1941. This called for and got rapid expansion of the nation's capacity for producing sulphuric acid.

The War Department and industry together worked out the coordination of the production of sulphuric acid with the production of explosives and the recovery of acid for reuse. The addition of extra equipment to existing acid plants was sufficient to cope with the increased demand on the industry.

SUMATRA. See NETHERLANDS INDIES under *Area and Population*.

SUNLAMPS. See ILLUMINATION.

SUNSPOTS. See ASTRONOMY.

SUPPLY PRIORITIES AND ALLOCATIONS BOARD (SPAB). President Roosevelt established the Supply Priorities and Allocations Board on Aug. 28, 1941, by executive order which set it up as a portion of the Office for Emergency Management. This order set forth the Board's duties as follows: "Consistent with the basic defense policies of the President, the Supply Priorities and Allocations Board shall: (a) Determine the total requirements of materials and commodities needed respectively for defense, civilian and all other purposes; establish policies for the fulfillment of such requirements, and, where necessary, make recommendations to the President relative thereto. (b) Determine policies and make regulations governing allocations and priorities with respect to the procurement, production, transmission, or transportation of materials, articles, power, fuel and other commodities among military, economic defense, defense aid, civilian and other major demands of the total defense program."

Thus brought into being as the principal policy-making body with respect to the use of the nation's physical resources, SPAB began by charting the general course along which the nation's defense effort should be made, laying down the policies that "we must forego the less essential that we may have an abundance of the more essential," and that "this means cutting off the fat and hardening the muscles."

At succeeding meetings, SPAB laid down more definite policies designed to insure the best possible utilization of the nation's resources. In the fields of building construction and public and private electric power construction, for example, SPAB ruled that priorities assistance should not be extended for any new projects whatever unless such projects were clearly essential to national defense or necessary for the public health and safety. In line with this, it also held that there should be no expansion of facilities for strictly civilian production if that expansion would require the use of appreciable quantities of critical materials.

Early in its career, SPAB paved the way for over-all planning of the use of America's productive capacity by directing the speedy compilation of detailed schedules of both military and civilian requirements as far in advance as possible. Subsequently, it called for substantial expansion of domestic production of critical materials, denied the use of steel plate for construction of a projected Texas-to-New York pipe-line on the ground that other needs for this material were more essential, and approved an Office of Production Management proposal for expansion of steel productive capacity by 10 million tons annually.

Within a few weeks of the time SPAB was set up, it became apparent that shortages of most of the critical materials had become so acute that the existing priority rating system would not be adequate to meet the situation. Accordingly, it directed the Office of Production Management (q.v.) to work out an allocation system for steel, and followed that by calling on OPM to prepare as speed-

ily as possible for allocation of critical materials to all major industries. To make certain that everything possible was being done to expand the nation's supply of these materials, it singled out one of the most important—copper—and directed OPM to hold an inquiry into all possible ways of increasing production.

In general, SPAB functioned throughout the final quarter of 1941 as a policy-making body, leaving the administrative part of the task to OPM and other agencies. Upon America's declaration of war on Japan on December 8, SPAB sounded the keynote for an all-out effort by declaring: "It is clear that a vastly expanded national effort is imperative. Production schedules for all manner of military items must be stepped up at once. Every activity of our national life and our civilian economy must be immediately adjusted to that change. To attain victory we aim at the greatest production which is physically possible."

On Jan. 16, 1942, President Roosevelt issued an executive order which abolished SPAB and set up in its place the War Production Board (WPB), whose chairman was charged with final authority over procurement and production under the war program. The War Production Board took over the functions and responsibilities previously exercised by SPAB and by the Office of Production Management.

See BUILDING; BUSINESS REVIEW under *New Construction*; PRODUCTION MANAGEMENT, OFFICE OF, WAR PRODUCTION BOARD

DONALD M. NELSON.

SUPREME COURT. See LAW. For decisions, see also the subject, as LABOR CONDITIONS, NATIONAL LABOR RELATIONS BOARD, NEWSPAPERS AND MAGAZINES, WAGE AND HOUR ADMINISTRATION.

SURGERY. See MEDICINE AND SURGERY.

SURINAM (Netherlands Guiana). A colony on the northern coast of South America, belonging to The Netherlands Area, 54,291 square miles; population (Jan. 1, 1940), 177,980, including the Indians and Negroes living in the forests. Paramaribo (the capital and chief port) had 54,853 inhabitants. Vital statistics (1939): 4,740 births, 1,876 deaths, and 463 marriages. Education (1939): 120 schools and 21,278 students.

Production and Trade. Sugar, coffee, cacao, bananas, rice, maize, rum, bauxite (615,434 met tons, 1940), gold (15,921 fine oz., 1940), salt, timber, and balata are the main products. Livestock (1939): 22,616 cattle, 7,315 swine, and 5,723 goats. Trade in 1940 (in U.S. dollars): \$4,544,000 (\$4,204,000 in 1939) for imports and \$3,910,000 (\$4,245,000) for exports. The United States sent 57.5 per cent of the imports and took 90.4 per cent of the exports. Bauxite accounted for 86.7 per cent of the total value of exports in 1940. Shipping (1939): 452 vessels of 523,600 register tons cleared.

Government. Budget estimates (1941): 6,443,817 guilders for revenue and 6,440,680 guilders for expenditure. The executive authority and administration are under the control of a governor, assisted by an advisory council. There is a representative body called the States of Surinam consisting of 15 members (5 appointed by the governor and 10 elected by the voters). Governor, Dr. J. C. Kielstra (appointed Aug. 16, 1933).

History. Under an agreement reached with the government of the Netherlands in London, it was announced from the White House in Washington on Nov. 24, 1941, that the United States of America ". . . has agreed to send a contingent of the

United States Army to Surinam to cooperate with the Netherlands forces in assuring the protection of the bauxite mines in that territory. This contingent will, of course, be withdrawn as soon as the present danger to the mines is removed and at the latest at the conclusion of hostilities.

"Simultaneously the government of the Netherlands has invited the government of the United States of Brazil to participate in this defense measure. It is understood that Brazil will contribute to the common aim by exercising an especial measure of military vigilance in the frontier zone adjacent to Surinam and by sending a mission to Paramaribo to exchange information . . . to assure maximum efficiency of the safety measures thus being jointly undertaken by the Brazilian, United States, and Netherlands forces.

"The government of Brazil has indicated its whole-hearted approval of the emergency measures. At the same time the government of the United States has notified the governments of the American republics of the foregoing arrangements which have been reached in the interests of all."

It was reported from Rio de Janeiro, Brazil, that United States troops had raised their flag in Surinam at 1:15 p.m. on Nov. 23, 1941. Commenting on the arrival of the American troops the newspaper *Surinamer* (Nov. 27, 1941) welcomed them "as co-guardians of the safety of this part of South America." The newspaper added "The Americans come here as collaborators and co-defenders not as intruders or deliverers."

See BRAZIL and NETHERLANDS, under *History*; MILITARY PROGRESS; UNITED STATES under *Latin America*.

SURPLUS FOOD, SURPLUS MARKETING ADMINISTRATION. See AGRICULTURE, U.S. DEPARTMENT OF; LIVESTOCK; RELIEF.

SVALBARD. An arctic archipelago (10° to 35° E. and 74° to 81° N.) owned by Norway. The principal islands are West Spitsbergen (or Mainland), North East Land, Prince Charles Foreland, Edge Island, Barents Land, King Karl's Land, Hope Island, and Bear Island (69 sq. mi.). Total area, 24,294 square miles; population (winter of 1938-39), 2,210. Green Harbor (capital), New Aalesund, Coles Bay, Longyearbyen, and Braganza Bay were the main settlements, all on the western coast of West Spitsbergen. Coal was the chief product (627,000 metric tons exported during 1938). Iron, asbestos, and gypsum have been found. It was announced on Sept. 9, 1941, that Canadian, British, and Norwegian forces had occupied Svalbard and set fire to coal and oil dumps, destroyed the coal mines, and taken over the wireless stations. The archipelago commands the route over which supplies from Great Britain to the Russian port of Murmansk can be sent.

SWAZILAND. See BRITISH EMPIRE.

SWEDEN. A constitutional monarchy of Scandinavia. Capital, Stockholm. Sovereign, Gustaf V, who succeeded to the throne Dec. 8, 1907.

Area and Population. Area, 173,341 square miles; population, estimated on Jan. 1, 1941, at 6,371,000 (6,250,506 at 1935 census). Of the 1941 population, 3,990,000 lived in rural and 2,381,000 in urban districts. The birth rate per 1,000 of population was 15.0 in 1940 (15.3 in 1939); death rate, 11.4 (11.5). Immigrants in 1939 numbered 7,178; emigrants, 3,580. Estimated populations of the chief cities on Jan. 1, 1940, were: Stockholm, 583,-

621; Goteborg, 280,602; Malmö, 154,270; Norrköping, 70,379; Hälsingborg, 62,099.

Defense. As of Jan. 1, 1941, Sweden's active army numbered about 140,000 men and trained reserves 460,000. There were approximately 1,000 men in the active air force and no reserves. The navy at the beginning of 1941 comprised 2 cruisers, 8 coast defense ships, 10 destroyers, 16 torpedo boats, 16 submarines, and various auxiliary craft. See below under *History*.

Education and Religion. Schooling is compulsory and there is practically no illiteracy. Of 761,287 children of school age (7 to 14 years) in 1936, 666,060 were attending elementary schools. In 1939 there were 51,479 pupils in 139 public secondary schools, 6,038 in 57 people's high schools, 3,700 pupils in 2 high and 9 elementary technical schools, 5,091 students in the two state universities (Uppsala and Lund), 2,536 students in private universities at Stockholm and Goteborg, and 894 students in the state faculty of medicine in Stockholm. According to the 1930 census, there were 6,653 Jews, 4,763 Roman Catholics, 3,981 Methodists, 805 Baptists, and 1,499 members of other minority creeds. The rest of the inhabitants adhered to the state-recognized Lutheran Protestant Church.

Production. The estimated national income rose from 9,107,000,000 Swedish crowns in 1936 to 11,510,000,000 in 1939. Of the 1939 income, industry and crafts accounted for 15,248,000,000 crowns; domestic trade, 1,740,000,000; agriculture, and fishing, 1,061,000,000; building and construction, 1,019,000,000. Estimated yields of the chief crops in 1940 were (in metric tons): Wheat, 454,500; barley, 192,600; rye, 296,100; oats, 1,144,900; potatoes, 1,868,317 in 1939; sugar beets, 1,899,870 in 1939; fodder roots, 2,348,937 in 1939, hay, 5,121,938 in 1939.

Estimated mineral and metallurgical production in 1940 was (in metric tons): Coal, 450,000; iron ore, 14,000,000; pig iron, 700,000; steel ingots, 1,151,914 in 1939; manganese ore, 6,000; tungsten, 200; copper, 10,000; zinc, 32,000; aluminum, 1,400. Peat output in 1940 was 150,000 tons. Shale oil production rose from 3 tons daily at the beginning of 1941 to nearly 30 tons daily at the year's end. Merchant ships delivered in 1940 totaled 190,000 tons dead weight (312,000 in 1939).

Foreign Trade. Notwithstanding substantial price increases, the value of 1940 imports declined to 1,999,266,000 crowns (2,498,685,000 in 1939), while exports fell to 1,337,936,000 crowns (1,888,634,000 in 1939). Import price index for 1940, 182 (123 in 1939); export price index, 148 (117). Trade in the chief commodity groups in 1940 was (in thousands of crowns): Animal and vegetable products, imports 304,243, exports 72,757; minerals and metals, imports 679,305, exports 490,933; chemicals and pharmaceuticals, imports 176,207, exports 43,756; hides, skins, rubber, textile materials, imports 371,372, exports 33,555; wood goods, pulp and paper, imports 28,472, exports 485,658; machinery, vehicles, instruments, imports 439,667, exports 211,277. In 1939 Germany supplied 24.8 per cent of the imports; United States, 16.6; United Kingdom, 13.0. Of the exports, the United Kingdom took 22.5 per cent; Germany, 19.5; United States, 9.5.

Finance. Budget estimates for the fiscal year ended June 30, 1942, placed revenues at 2,082,000,000 crowns and expenditures at 1,889,000,000. Actual revenues for 1940-41 were 2,029,000,000 crowns and the final deficit was 1,609,000,000

crowns against a deficit of 924,000,000 crowns in 1939-40. The national debt rose from 3,625,019,-843 crowns on June 30, 1939, to 5,997,000,000 crowns on Oct. 31, 1941. At the official exchange rate in 1941 (4.175 crowns = \$1) the Swedish crown (krone) was equivalent to \$0.2395. Its average exchange rate was \$0.2399 in 1938 and \$0.2380 in 1939.

Transportation. Sweden in 1941 had about 10,381 miles of railways, about 55,000 miles of highways (see *ROADS AND STREETS*), and air lines connecting with Helsinki, London (irregularly), and the chief cities of German-dominated Europe. Under legislation passed in 1939, all railways will be state-owned and operated by 1943. At the end of 1941, 90 per cent of the State Railways' trackage was electrified. Operating income of State Railways in 1940, 361,000,000 crowns, expenditures, 267,-000,000 crowns. Traffic statistics of the Swedish air transport company in 1940 and 1939 were: Passengers, 32,000 in 1940 (60,000 in 1939); miles flown, 1,056,380 (1,802,060); express, 881,-840 lb. (1,126,551); mail, 507,058 lb. (1,272,-054). Due chiefly to war sinkings, the Swedish merchant fleet declined from 1,582,000 gross tons in July, 1939, to 1,480,000 gross tons in July, 1941. Up to June, 1941, 99 ships of 264,830 gross tons had been sunk and 26 vessels of 46,923 gross tons seized by belligerents.

Government. The Constitution of 1809, as subsequently amended, vested executive power in a hereditary King, acting under the advice of a Council of State (Cabinet), which is responsible to the Diet or Riksdag. The Upper Chamber of the Riksdag has 150 members, one-eighth of whom are elected annually by provincial and city councils; the Lower Chamber, 230 members, elected by direct male and female suffrage for four years. The composition of the Lower Chamber elected Sept. 15, 1940, was: Social Democrats, 134; Conservatives, 42; Agrarians, 28; People's party, 23; Communists, 3. A coalition Government including representatives of the Social Democratic, Agrarian, Conservative, and People's parties was appointed Dec. 13, 1939, with Per Albin Hansson (Social Democrat) as Premier. For the other members of the Cabinet, see *YEAR BOOK* for 1940.

HISTORY

Strains on Neutrality. The Swedish Government and the great majority of the people clung to neutrality during 1941 as the sole hope of avoiding involvement in the rapidly expanding world conflict. But the task proved increasingly difficult. The Nazi occupation of Norway in 1940 had cut Sweden off from the anti-German world and ended the possibility of effective military support from the Allied powers. Consequently the Swedish authorities felt obliged to make more and more concessions under constant German political and economic pressure.

The German-Finnish war against the Soviet Union, beginning June 22, made Sweden's position even more delicate and dangerous. Previously most Swedes had hoped that an Allied victory over Germany would free them from the threat of Nazi domination. But the Anglo-Soviet alliance increased the possibility of Soviet control over Finland and the Reich in the event of an Allied triumph. This prospect, bearing an obvious menace to Swedish independence and democratic institutions, caused even greater apprehension. It led the Stockholm Government to aid Finland in various ways short of war and to modify its strict neutrality so as to favor Germany against Russia.

During the last quarter of the year two events occurred that again swung Swedish official and unofficial sentiment strongly in favor of the anti-Axis coalition. One was the institution of martial law and harsh measures of repression by the German military authorities in Norway (q.v.). The other was the entrance of the United States into the World War. This strengthened Swedish belief in an Allied victory that would not endanger the independence and existing political institutions of the small European countries.

Defense Preparations. Meanwhile Sweden was feverishly strengthening its armed forces as a deterrent to violation of its neutrality. The budget for 1941-42 (see *Finance*), introduced in the Riksdag on January 11, placed supreme emphasis upon defense, which was then costing the nation an average of 70,000,000 crowns monthly. About the same time the conscription period was lengthened to a year or more. Development of a new air base at Lulea and further expansion of the air, land, and naval forces was provided for. Launching another 500,000,000 defense loan on January 19, Foreign Minister Guenther pointed out that defense expenditures had risen from 148,000,-000 crowns in 1938 to 2,400,000,000 crowns in 1941. By the beginning of June, subscriptions to the loan had reached 583,000,000 crowns. In the latter month it was estimated that 42,000 industrial workers were engaged on defense orders. A severe setback to defense preparations occurred September 17 when three modern destroyers were lost through a seemingly accidental explosion and fire in the Stockholm naval yard.

In mid-March numerous army reserves were called to the colors. This move was followed by Premier Hansson's emphatic declaration of March 25 that neither Sweden's territory nor resources would be put at the disposal of any belligerent. These developments coincided with further German demands for military cooperation and a large increase in the staff of the German Legation in Stockholm. About the same time Dr. Paul Walter, chief of the German commercial delegation in Stockholm, warned a group of leading industrialists that "countries politically against us cannot expect a generous commercial policy from our side."

The largest military maneuvers ever held in Sweden were staged during the spring in the extreme north, near fortifications built by the Swedes during the World War to check a possible attack from Russia. This indicated to foreign observers that Swedish policy anticipated an early collision between Germany and the U.S.S.R., and that the Government was preparing to throw in its lot with the Reich if forced to choose between the two powers. Yet the admission of German troops into Finland late in April, signifying at least partial abandonment of Finland's neutrality, aroused the gravest misgivings in Sweden. A controversy between the Swedish and Finnish press ensued, with leading Swedish newspapers protesting that neutral Sweden could not continue its close collaboration with Finland under these circumstances.

Finnish-German Pressure. Aroused by the German conquest of Yugoslavia and Greece, nearly 1,000,000 Swedes on May 1 participated in demonstrations of national solidarity under the slogan "freedom above everything, for him who is worthy of it." Premier Hansson again proclaimed Sweden's determination to preserve its freedom, independence, and neutrality at any cost. Before flying to Helsinki, on May 6 to return the Finnish Foreign Minister's visit to Sweden three weeks earlier,

Foreign Minister Guenther announced that his Government would support Finland in its reconstruction efforts and in defense of its national liberty. He said, however, that this did not imply unfriendly feelings toward any other powers, including the Soviet Union. The policy of "absolute neutrality" was reaffirmed by King Gustaf on May 25, and by other government spokesmen on June 6, Sweden's flag day.

Nevertheless Sweden yielded to the growing German pressure in important respects. Some weeks before the Nazi attack upon Russia, a German military mission was reported to have conferred with officers of the Swedish general staff on Soviet defenses in the north. Following German complaints of Communist activities in Sweden, the Swedish police raided Communist centers throughout the kingdom on June 4 and arrested some 20 persons. Reported German and Soviet fleet movements in the Baltic led the Swedish Minister of Education on June 6 to declare that a threat to the strategic Swedish island of Gotland was "a threat to the heart of Sweden."

On June 25 the Swedish Government announced that at the demand of Germany and Finland it had agreed to permit the transit of one division of German troops from Norway to Finland across Swedish soil "under a form which will protect Swedish sovereignty." This action was approved at a three-hour secret session of Parliament. In announcing the decision, a spokesman of the Foreign Office said that Sweden was not taking sides with any of the main belligerent powers but only with Finland and this for "special purposes." On the same day, the Government called more reservists to the colors.

There was strong internal criticism of the Government for granting the German-Finnish demand, especially after the German press interpreted the move as Sweden's adhesion to Hitler's "new order" in Europe. Replying to this criticism on June 29, Premier Hansson declared that the transit permit was issued under heavy German pressure and only after "many hesitations." A formal protest was lodged by the British Government.

A Government communiqué of August 6 tacitly admitted flights of German planes to Finland across Sweden, passage of German warships through Swedish territorial waters, and the transit on Swedish railways of war materials and supplies to the Finnish front and of wounded Germans being sent from Finland to Norway. All this was declared compatible with the rules of international law.

As during the Russo-Finnish war of 1939-40, the Swedish Government permitted the recruiting of Swedish volunteers to fight with the Finnish army. It also approved a Finnish appeal for foodstuffs and other supplies for the use of both the military and civilian population, including 5,000 tons of flour, 1,500 tons of canned meat, 1,300 tons of butter, and 400,000 rations of dried food. But the Swedes turned a deaf ear to both German and Finnish demands for their military participation in the Russian war. A two-months' campaign by German and Swedish Nazis to recruit Swedish volunteers for the German army yielded ten men.

Equally unsuccessful was an effort by the Propaganda Ministry in Berlin to stimulate rivalry between Sweden and Finland for "leadership of the north." Newspapers in Sweden, Finland, and so far as they were able, in Denmark and Norway, all ridiculed the idea of a "leading" Scandinavian state. Yet on September 24 Sweden was compelled to make a 100,000,000-crown clearing advance to

the Reich. On December 19, a new Swedish-German trade agreement covering 1942 was concluded.

Effect of Events in Norway. The Swedish reaction to the events of September in Norway (see NORWAY under *History*) demonstrated the underlying unity of the northern countries. The Swedish press of virtually all shades of opinion joined in denouncing the German martyrdom of Norwegian patriots and in repudiating Hitler's "new order." The Swedish Trades Union Congress paid ceremonial tribute to the executed Norwegian labor leaders and adopted a resolution acclaiming them as "martyrs in their fight for Norway's freedom." On September 20 Prime Minister Hansson again stated Sweden's "fixed determination . . . to maintain our position as a free nation, standing outside of the war."

Earlier in the year (March), the Swedish Government requisitioned nine Norwegian vessels in Swedish harbors and placed them at the disposal of the Swedish Traffic Commission. On April 8 a new trade and clearing agreement was made with the Quisling administration in Norway whereby Sweden was to receive some 60,000,000 crowns worth of Norwegian products for 55,000,000 crowns worth of Swedish goods.

Support of Finland. After a secret debate on foreign affairs before the Riksdag, Foreign Minister Guenther on October 29 proclaimed both Sweden's solidarity with Finland and its determination to remain neutral in the struggle among the great powers. Shortly afterward Prime Minister Rangell of Finland went secretly to Stockholm to consult with Swedish officials on Finland's course with respect to the Anglo-American demand that it suspend hostilities against Russia. The British declaration of war on Finland on December 7 confronted the Swedes with new difficulties. Negotiations were begun in London to prevent modification of the British policy of permitting limited imports into Sweden from overseas.

U.S. Relations. The U.S. Government during the later part of 1940 and 1941 applied to Sweden some of the restrictions imposed upon American trade with Axis and Axis-controlled countries. As a result of Washington's refusal in 1940 to issue export licenses for 144 pursuit planes ordered by Sweden in the United States, the Kingdom of Sweden on July 3, 1941, filed suit in a New York Federal Court for cancellation of its letter of credit covering purchase of the planes and for damages of \$7,039,188 against Vultee Aircraft, Inc., for nondelivery of the planes. On December 13 the United States seized the 20,067-ton Swedish passenger liner *Kungsholm*, laid up in New York harbor.

Economic Conditions. A continued decline in production of consumption goods and the extension of the rationing system were major economic trends during 1941. Increasing concentration of industry upon armament production and government public works projects kept industrial activity at approximately the 1935 depression level, but even the armament and public works programs were handicapped by the growing lack of fuel and especially by Germany's failure to deliver the promised quantities of coal, coke, and coke pig iron, upon which the Swedish iron and steel industry was dependent.

Some relaxation of the sea blockade was obtained through negotiations with both Britain and Germany. Each country authorized five Swedish ships to pass through the blockade monthly under certain conditions. As a result Sweden was able to

export some of her more expensive manufactured products and to import much-needed food supplies. Rapid progress was made in developing domestic supplies of commodities that were previously imported. By Apr. 15, 1941, a total of 46,937 motor vehicles had been converted for the use of wood gas and other petroleum substitutes. A number of pulp factories were converted for the manufacture of fuel alcohol and feedstuffs from wood. The shale oil industry was expanded. See also *Production*.

The Government assumed wider control over agriculture and all other departments of the national economy. A law was passed compelling farmers to raise sugar beets at government-fixed prices. The sugar beet acreage was reduced 15 per cent to permit increased production of more urgently needed crops. There were further successive increases in the tax burden. A new Price Regulation Law of June 16 gave the Government increased control over prices. All the emergency powers assumed by the Government in June, 1939, were extended into the summer of 1942.

As a result of trade agreements with Germany, Denmark, Norway, and Finland and the passage of Swedish ships through the British blockade, the food situation remained fair. At the end of December the rationing of clothes was ordered, effective Jan. 6, 1942.

See FINLAND and NORWAY, under *History*; BIRTH CONTROL; CHEMISTRY, INDUSTRIAL; LABOR CONDITIONS under *Employment and Wages*; LIVE-STOCK; MUSIC; NAVAL PROGRESS; SOCIALISM.

SWEDISH LITERATURE. Swedish authors produced in 1941 a body of literature comparing favorably in quantity with preceding years and maintaining a reasonably high average of quality, particularly in the novel and lyric poetry. Some less important volumes of short stories appeared, together with an occasional rather significant volume of essays and reminiscences. The drama seems to have been poorly represented. The usual large number of translations into Swedish appeared, chiefly novels and books about World War II.

The older generation of Swedish authors has not been especially active during the year, only an occasional volume coming from their pens, and none of these represent particularly significant literary developments. Among these is Sten Selander's volume of verse, *Sommarnatten* (*The Summer Night*), reflecting primarily a deepening response to nature; Ludvig Nordstrom's *Den flugiga världen* (*That Curious World*), a rather brilliant log-book of travel impressions from coastal Norrland; and Carl Larsson i By's *Den gamla goda tiden* (*The Good Old Times*), a collection of short stories dealing realistically with the more heroic sides of Swedish peasant life some generations ago. To these may be added a volume of posthumously published reminiscences from childhood *När kastanjerna blommade* (*When the Chestnut Trees Blossomed*) by Verner von Heidenstam, a very welcome addition to the sparsely represented biographical material at present available on one of Sweden's central cultural figures in our century. Swedish literary life has sustained very serious losses during the year in the deaths of Hjalmar Söderberg, Albert Engström, Erik Lindorm, Torsten Fogelkvist, and the young Karin Boye. From Fogelkvist's pen came posthumously *I totalitetens skugga* (*In the Shadow of Totalitarianism*), a last testament, in the form of a series of brilliant essays, expressing an uncompromising anti-totalitarian point of view on modern world problems.

The younger generation of authors has been not only more active than their older colleagues during the year, but in the main they may perhaps be said to have been more *significantly* active, though they cannot be said to have produced any single work of definitely major importance. Among the more important novels are Vilhelm Moberg's *Rid i natt!* (*Ride Tonight!*), a powerfully conceived historical novel, dealing with the struggle between Småland peasants and an oppressive race of foreign-born Swedish noblemen, and pointing in a scarcely veiled manner to the possibility of a parallel in Sweden's immediate future; and two novels by Gosta Carlberg, *Hotell Zions nya gäst* (*The New Guest at Hotel Zion*) and *En riktig människa* (*A Real Human Being*), which reveal a new Carlberg, more direct, less labored, and less mystifying than the novelist we know from the brilliant, though somewhat chaotic *Baren varandras bördor* (*Bear One Another's Burdens*) of a few years ago. Other less important efforts in fiction are Ivar Lo-Johansson's *Jordproletarerna* (*The Proletariat of the Soil*), Waldemar Hammenhog's *Svar med amatorfoto* (*Answer with Amateur Photograph*), Sven Stolpe's historical novel *Dobeln* and his *Världen utan nåd* (*The World without Grace*), and Gunhild Tegen's *Du blir aldrig gift* (*You Will Never Marry*).

Lyric poetry can perhaps not be said to be as strongly represented in 1941 as in 1940; but the year did see the appearance of at least two definitely significant volumes of verse from the younger generation of poets—Johannes Edfelt's *Sång för reskamrater* (*Song for Travelling Companions*) and Gunnar Ekelof's *Färesång* (*Song of the Ferry*).

A very worthy addition to books dealing with the Finno-Russian war of 1939 is the beautifully written book *Blod och sno* (*Blood and Snow*) by Peter William Nisser, who at the age of 20 served as a Swedish volunteer in the Finnish army. Of the Swedish books that seek to come directly at grips with broad political and cultural problems of the day, Alva and Gunnar Myrdal's *Kontakt med Amerika* has attracted perhaps the widest attention.

ALRIK GUSTAFSON.

SWIMMING. Outstanding performances by 17-year-old William Smith Jr. of Honolulu, a one-sided victory by the Alexander House Community Association of Hawaii in the men's national A.A.U. outdoor championships, and a complete upset triumph by the nymphs of the Riviera Club of Indianapolis in the women's outdoor national classic were the distinguishing events in swimming during 1941.

Smith splashed through to stamp himself as the greatest middle-distance swimmer of all time. He lowered world's free-style records from 220 yards to 800 meters. In outstanding form, he covered 800 meters in 9:50.9 in a 100-meter pool, equal to about 9:43 in a 50-meter pool, the length of course over which was set a tabled standard of 9:55.8. He shaded the time for 220 yards to 2:07.7 and 440 yards to 4:38.5, smashing the 400 meters record also with the latter mark.

The Alexander House swimmers, led by Smith, for the third successive year showed little pity, as they far overshadowed the rest of the field, easily overcoming the indoor champions of Chicago Towers Club, next in line, 71 to 21.

As Adolph Kiefer of the Chicago Towers Club again proved his supremacy by breaking ten standards, and Joe Balmores of Hawaii cut the United States long-course time for the 300-meter medley to 3:56.9, they proved the validity of the A.A.U. in acclaiming, for the year, 119 records.

Leading women swimmers were Nancy Merki, of

the Multnomah A.A.A. of Portland, Oregon, who dropped course records for 800 meters to 11:15.9 and 1,500 meters to 22:12.2; Gloria Callen, New York, in a long-course dorsal record of 1:17.5 for 100 meters; Lorraine Fischer of the New York W.S.A., in cutting the short-course breast-stroke standards for 100 meters to 1:22.9; Patty Aspnall of the Riviera Club of Indianapolis, making 3:07.8 for 220 yards; Helene Rains of the New York W.S.A., short-course mark of 4:32.9 for the 300-meter medley; and the Riviera quartet, long-course record of 10:30.7 for the 800-meter relay.

In diving, Earl Clark of Ohio State University won both the springboard and platform titles; Helen Crenkovich, San Francisco, duplicated the feat in the women's division.

Michigan captured the N.C.A.A. and Big Ten championships. Yale led in the East and California reigned on the Pacific Coast.

SWISS LITERATURE. Literary production in Switzerland was decisively influenced by four factors: the war, a strong interest in national history, the National Exhibition of 1939 in Zurich, which had aroused a wave of patriotism, and the 650th anniversary of the Swiss Confederation celebrated Aug. 1, 1941. Of the purely patriotic literature the following publications are of lasting significance: *Die Schweiz im Spiegel der Landesausstellung* (3 vols., text in German, French, Italian; third volume devoted exclusively to Swiss Art), *Heisst ein Haus zum Schweizerdegen*, by Emanuel Stuckelberger (2 vols., 1,000 years of Swiss cultural history), *Grosse Schweizer* (110 biographies of persons prominent in Swiss history), by M. Hüllmann, *Die Schweiz* (A Swiss national yearbook), by A. Latt; *Urschweiz, Heimat des Vaterlandes*, by W. Laubli and H. Steger.

Political topics are discussed by Gonzague de Reynold, *Défense et illustration de l'esprit suisse*, and *Qu'est-ce que l'Europe? Les origines*, by Denis de Rougemont, *Mission ou démission de la Suisse*; by Edmond Bille, *Le carquois vide (Souvenirs d'un arbalétrier 1914-1918)*, and by Giuseppe Motta *Testimonia temporum* (Selected addresses and essays).

Notable works in art and history were by Georg Schmidt, *Schweizer Malerei und Zeichnung im 15. und 16. Jahrhundert*; W. Y. Müller, *Die Kunst Ferdinand Hodlers* (vol. 2); Hans Jenny, *Kunsthändler durch die Schweiz*; Emil Ermatinger, *Zürich im Spatrokoko*; L. Mazzucchetti and A. Lohner, *Die Schweiz und Italien* (200 years of cultural relations). A new edition of Ulrich Zwimgli's publications was started in Zurich, *Der Prediger* (2 vols.).

For genealogical studies, *Familiennamenbuch der Schweiz*, by Ulr. Stampa, is indispensable. Swiss historical and heroic legends are presented by Gonzague de Reynold in *Contes et légendes de la Suisse héroïque*.

Oskar Eberle and the leading Swiss playwright, Caesar von Arx, joined forces in producing an impressive *Bundesfestspiel* (National Pageant) at the celebrations of August 1 in Schwyz, while the allegorical pageant, *La cité sur la montagne*, by Gonzague de Reynold, also enjoyed great popularity. Denis de Rougemont and Arthur Honegger presented the national oratorio *Nicolas de Flue*. Other dramatical productions were *Gilberte de Courgenay* (patriotic), by Maeglin and Haug; *Romanze in Plüsch* (unhappy love), by Caesar von Arx; *Frymann* (the value of gold), by Johannes Guggenheim; *Pestalozzi* (mysterious drama), by Albert Steffen; *Die vier Füssler* and *Der Bürgermeister von Zürich* (a Hans Waldmann tragedy taken from

15th-century Swiss history), by H. F. Schell. Of the older Swiss-Dutch authors, Otto von Greyerz (died 1940) is still a favorite.

Among the publications in French, C. F. Ramuz' *Oeuvres complètes*, in 20 volumes, appeared in Lausanne. Maurice Zermatten made a strong impression with three books in prose: *Contes des hauts pays du Rhône* (also in German), *Le coeur inutile* (also in German), *La colère de Dieu*. Also were the anthologies *La vie romantique du pays romand* and *Sociétés des écrivains suisses, Vingt-huit écrivains de la Suisse romande* (verses and prose). (See also FRENCH LITERATURE.)

In Italian was the anthology, *Scrittori della Svizzera italiana* (2 vols.). Francesco Chiesa was awarded the Angiolo Silvio Novaro Prize by the Royal Italian Academy.

In German fiction may be mentioned the historical novels by Karl Anton Vogt (*Hans Waldmann*), Robert Faesi (*Fusilier Wipf*), R. B. Maeglin (*Gilberte de Courgenay*), R. Kuchler-Ming (the trilogy *Die Lauwiser und ihr See, Die Lauwiser im Krieg, Die Lauwiser und ihr Pfarrer*), and by Maria Duth-Rutishauser (*Der Huter des Vaterlandes*). Social problems are dealt with by Maria Ulrich (*Der unbekannt Arbeiter*), Francesco Chiesa (*Sankt Amarielis*), Alfred Fankhauser (*Der Messias*). A collection of short stories from various authors was published by Walter Muschg (*Schweizer Novellenbuch*). Repercussions of the present war are to be found in *Gewehr von der Wand!* (prose) by Josef Konrad Scheuber, *Gewehr bei Fuss* (poems) by Paul Lang, *Kamerad!* (poems) by Hans Rhyn, *Der Schuttelbecher* (poems) by Werner Sutermeister. The poet Albin Zollinger died in November, 1941.

Swiss Dutch, spoken by 3,000,000 people, though not recognized as an administrative language, is more and more used for literary purposes—poetry, plays, short stories, novels. Rudolf von Tavel's historical novels, Josef Reinhart's novels and short stories, Meinrad Lienert's poems appeared in new editions. Karl Grunder's *Gottwyl*, Simon Gfeller's *Eichbuelersch*, T. J. Felix's *Es mantschelet*, Jakob Kaser's *Fyrobe*, describe various aspects of Swiss country life. Traugott Meyer, Switzerland's outstanding lyric poet, comes forth this time with two books in prose: *'s Tunäldorf* (novel) and *'s Bottebrächts Miggel verzellt* (stories). *Schwyz Meie*, by Adolf Guggenbühl and Georg Thurer, is a verse collection of most charming qualities (with biographical notes). *Schwyzert III, 1-4* contains a bibliography by G. Schmid.

ALFRED SENN.

SWITZERLAND. A federated republic of central Europe. Capital, Bern (Berne).

Area and Population. Switzerland has an area of 15,944 square miles and a population estimated at 4,216,000 on Jan. 1, 1940 (4,066,400 at the 1930 census). In 1939, 1,374,800 Swiss lived in cities of more than 10,000 inhabitants. Living births in 1939 numbered 63,837 (15.2 per 1,000); deaths, 49,484 (11.8); marriages, 31,513 (7.5). Estimated populations of chief cities on Jan. 1, 1940: Zurich, 333,600; Basel, 162,600; Geneva, 123,300; Bern, 122,400; Lausanne, 90,750; St. Gallen, 63,550; Winterthur, 59,000; Lucerne, 54,650. The 1930 census showed 2,924,313 German-speaking Swiss; 831,097 French-speaking; 242,034 Italian-speaking; and 44,158 Romansch-speaking.

Defense. All males from 18 to 60 years of age serve in the compulsory national militia. Some 650,000 men were mobilized following the outbreak of the European War in 1939. At the beginning of

1941 an estimated 525,000 men were under arms (see *History*). The active air force numbered 6,840 men on Jan. 1, 1941; it had less than 500 planes. The defense budget for 1941 totaled 1,050,000,000 Swiss francs.

Education and Religion. The system of public education varies by cantons. In the academic year 1938-39, pupils in primary schools numbered 460,-222; in secondary and special schools, about 90,-000; the universities of Basel, Zurich, Bern, Geneva, Lausanne, Fribourg, and Neuchatel had among them 9,126 students in the summer of 1939. Literacy is virtually universal. The census of 1930 reported 2,230,303 Protestants, 1,666,350 Roman Catholics, and 17,973 Jews.

Production. At the 1930 census, 404,239 persons were engaged in agriculture, 819,018 in manufacturing and trades, and 169,989 in commerce. Exclusive of products used by farmers, agricultural production in 1940 was provisionally estimated at 1,491,300,000 Swiss francs, of which 1,105,200,000 francs represented animal and poultry raising and 386,100,000 francs soil cultivation. The total value was an increase of 15.7 per cent over the 1939 level. The yield of potatoes in 1940 was about 900,-000 metric tons. Livestock in 1939: 1,700,585 cattle, 926,400 milk cows, 800,000 swine, and 146,-000 goats. The hotel industry, with an investment of 2,100,000,000 francs, was hard hit by the European War. Expenditures of foreign tourists in 1940 were about one-fourth those of 1939, itself a poor year. The principal manufactures are watches and clocks, machinery, textiles, electric equipment, chemicals, shoes, cheese, condensed milk, etc.

Foreign Trade. Imports in 1940 totaled 1,853,-600,000 Swiss francs (1,889,358,000 in 1939); exports, 1,315,700,000 (1,297,577,000 in 1939). The volume of 1940 imports was one-third less than in 1939. The leading 1939 imports, in order of value, were mineral substances, iron work, cereals, fruits and vegetables, and chemicals. Chief exports: Machinery, clocks and watches, dyes, and cotton goods. See *YEAR BOOK* for 1940 for distribution of 1939 trade by countries. Also see *TRADE, FOREIGN*, in this volume.

Finance. Actual budget receipts for 1940 were 786,000,000 Swiss francs (ordinary, 482,000,000, extraordinary, 304,000,000) and expenditures 1,677,000,000 francs (ordinary 512,000,000; extraordinary, 1,165,000,000). In the preceding 26 years the budget showed a surplus only four times. Extraordinary expenditures for national defense and mobilization were estimated at 2,533,100,000 francs from Sept. 1, 1939, to Dec. 31, 1941. The ordinary budget estimates for 1941 anticipated revenues of 518,000,000 and expenditures of 592,-000,000 francs. The public debt on Jan. 1, 1940, was 5,841,396,529 francs, including the railway debt of 3,116,304,350 francs. The Swiss franc exchanged at an average of \$0.2253 in 1939 and \$0.2268 in 1940.

Transportation. The railways, with about 3,218 miles of line, carried 119,700,000 passengers and about 20,000,000 tons of freight in 1940. Gross operating receipts were 395,500,000 francs; operating expenditures, 230,000,000. The highway mileage was 10,291 in 1940 (see *ROADS AND STREETS*). Swiss and foreign air lines operating within the country carried 62,239 passengers in 1939. Merchandise transported through the Rhine port of Basel in 1939 totaled 2,115,932 metric tons. See *History* below.

Government. The Constitution of 1874 provides a republican confederation of 22 cantons or States. The Federal Assembly consists of two chambers;

one, the Council of States, is composed of 44 members—two from each canton; the other chamber, the National Council, has 187 members, all elected quadrennially by the obligatory vote of males and females who have attained 20 years of age. The Federal Council consists of seven members, all elected quadrennially by vote of the united chambers of the Federal Assembly; by similar vote, but annually, are chosen, from among the seven, a President of the Confederation and a Vice-President of the Federal Council. Each of the Federal Council's seven members is assigned to the direction of one of the seven Federal administrative departments. Dr. Ernst Wetter was President during 1941. Dr. Philippe Etter (Vice-President in 1941) was elected, Dec. 10, by the Federal Council to be President in 1942.

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Efforts to Trade for Food. Since the country had more inhabitants than its largely uncultivable surface could feed, it faced the necessity of selling Swiss products where their price would buy return cargoes of foodstuffs. This could not be done within the group of European countries that Germany and Italy held in subjection. There remained Russia, at peace with these two conquerors early in the year, but shaping policies for itself. Agents of Switzerland succeeded in negotiating at Moscow in February an agreement (announced on the 22nd) for exchange of goods over the space of two years, by a system of barter, to an intended total "turnover" of 224,800,000 Swiss francs for the first year and 300,000,000 for the second. The Swiss stipulated for grain, timber, cotton, and products of petroleum, they offered machine tools, instruments of precision and other metal products in which fabrication, in point of value, much outweighed material. The German invasion of Russia, following before opportunity for any great exchange of goods under this agreement, put Russia out of the Swiss trading range for the rest of the year.

The Swiss could still hope to maintain trade with countries outside of Europe. Undiscouraged by the fate of its effort to send out Swiss goods on a fleet of Greek ships, via Genoa—a plan spoiled by the Italo-Greek war in 1940—the Swiss Government acquired seven vessels in its own name and through corporations that it controlled. It registered these under its own flag, stating their home port as Basel on the Rhine. The law authorizing this move was approved on April 8. Three vessels were acquired by the Government; four were acquired by various corporations and chartered to the Federal War Transport Office. These vessels, totaling, by November 1, 39,210 tons, operated mainly between Genoa, Lisbon, and New York. Their operations via Genoa depended on the issue of certifications by the British authorities, permitting them to pass the blockade of that port. Trade via Lisbon, though free from this hindrance, had to struggle with the handicap of greatly impaired transportation on the railroads to Portugal through Spain and on those through France as well.

The Spanish Government favored Swiss use of Iberian routes but stood in no position to put its own railways in order; it helped matters to some extent by authorizing the Swiss, in March, to run goods through Spanish territory, on motor trucks from the French border, and by chartering to the Swiss Government, April 27, some 200 wrecked or derelict freight cars for the latter to repair and operate. A Swiss organization called Autotransit undertook to move goods by motor truck and began

operations between Switzerland and Portugal with the first 20 of an intended 100 vehicles, June 30.

The trade overseas, thus brought about, continued with intermittent success. A variety of risks made it precarious. The chief of these lay not in the physical dangers of navigation amid submarines and passage of goods over lands disordered by war, but in the jealousies aroused in belligerents on either side by the other side's relations with the Swiss. Germany suspected them of harboring British subjects advantageously situated to gain German secrets. Great Britain and Italy alike curtailed the lists of goods that they would allow to pass in the Swiss vessels. Great Britain reduced in August the number of certifications allowed for Swiss vessels and declared, September 24, intention of terminating them altogether. When the United States became a belligerent in December the future of Swiss external trade became highly dubious, and with it the procurement of the needed foodstuffs, which were to come from America.

Swiss Foreign Relations. Relations with Germany outranked all other in concerns of the Swiss Government. Fuel, iron, and fertilizer had to be obtained from the Reich. Without fuel and iron the main industries could not operate and transportation must cease, without fertilizer the even normally insufficient crops would shrink as much as if a great part of the cultivable acreage had lain fallow. These considerations dictated friendly relations with Germany. The Republic had in return little to offer the Reich—not enough to render its independence an object of particular dislike. A commercial treaty between the two expired on June 30 and another such treaty had to be made. Its negotiation, a matter of high importance to the Swiss, stretched out beyond the term of the existing treaty, which had to be temporarily extended. The new agreement, signed on July 19, brought Switzerland the advantage of higher monthly deliveries of German coal (200,000 tons), particularly needful as the stored coal in Switzerland had been in great part burned. Germany guaranteed to deliver 13,500 tons a month of iron, 14,500 tons a month of petroleum and its derivatives, and also fertilizer, sugar, and iron. Switzerland was required to furnish Germany with animals for slaughter, some dairy products, and fruit if its harvest allowed. Germany also got the option to buy a variety of goods at will. The arrangement threatened to cost Switzerland more in money than her exports could meet. In particular, the cost of German coal had risen; figures published in December showed that the Swiss had paid about 28,000,000 francs for some 816,000 metric tons of German coal bought in all of 1939 and 50,000,000 francs for 458,000 tons bought in the first half of 1941.

A treaty with Italy, announced at the beginning of June, established the facilities for Switzerland's oversea trade via Genoa.

Swiss sentiment toward Germany and Italy was repeatedly alarmed by declarations in the press of these countries, warning Switzerland of the need to conform to the "new order" then being established on the European continent. One of these warnings appeared in the *Boersen-Zeitung* of Berlin early in May. It pointed out that to the contrary of the latitude allowed the Swiss press, the German Government held publishers to account for journals' utterances; it thus seemed to give the air of Government approval to its own warning that Switzerland curb published expression of anti-German opinions. The *Gazetta del Popolo* of Turin charged in April that a British center of espionage was maintained near the Italian border and sug-

gested that Switzerland's status might have to go "on the agenda of continental rearrangement." The German Legation, whether from inadvertence or from design, invited to its celebration of the anniversary of the Third Reich one-time members of National Movement, a society that had been dissolved for unruly attempts to raise a Swiss counterpart of the Nazi regime.

It was a chronic German and Italian grievance that Switzerland did not take more effectual action against British airmen flying over Swiss territory on the way to or from air attacks on the Axis countries. The Swiss Government protested on more than one occasion to the British Government.

Internal Economy. The year saw much extension of public control over prices and over consumption of necessities. A Department of Economy held centralized authority over the controlling agencies. It received increased powers in February, relating to the so-called war-economy syndicates that had been authorized in 1939. It thus became possible for the department to deny goods and the necessary permit for operating a business to persons who otherwise might evade regulation by not joining a syndicate. Restaurants and hotels were limited as to larder. Consumers were paid for used tin cans, and these were renovated for re-use.

See ARCHITECTURE; FAIRS, EXPOSITIONS, AND CELEBRATIONS; LABOR CONDITIONS under *Collective Bargaining*, etc.; MUSIC, NEWSPAPERS AND MAGAZINES; SWISS LITERATURE

SYNTHETIC MATERIALS. See CHEMISTRY, INDUSTRIAL; RUBBER.

SYPHILIS. See MEDICINE AND SURGERY; PUBLIC HEALTH SERVICE.

SYRIA AND LEBANON. A territory on the east coast of the Mediterranean between Turkey and Palestine, mandated to France by the League of Nations on July 24, 1922, and occupied by British and Free French military forces in June–July, 1941. Beyrouth (Beirut) was the seat of the French High Commissioner.

Area and Population. At the time of the British-Free French occupation, the territory was divided into the Republic of Syria (capital, Damascus; area, about 72,560 square miles; estimated population, 2,487,000 in December, 1938) and the Republic of Lebanon (capital, Beyrouth; area, 3,470 square miles; population, 862,600 at 1935 census). Included in the Syrian Republic were the two semi-autonomous districts of Latakia (capital, Latakia, area, 2,310 square miles; estimated population, 372,000 in 1938) and Djebel Druze or Jebel Druze (capital, El Suweidh; area, about 2,700 square miles; estimated population in 1938, 71,000 excluding some 15,000 nomads who spent part of their time in the district)

The people are mainly Arabs and Arabic is the chief language, but there are considerable numbers of Turks, Kurds, Turkomans, Circassians, Armenians, Iranians, and Jews as well as about 28,000 Europeans. The chief cities, with 1935 populations, are: Damascus, 193,912; Aleppo, 177,313; Beyrouth, 134,655; Homs, 52,792.

Education and Religion. Education statistics for the entire mandated territory in 1938 showed 809 public elementary schools (87,220 pupils), 1,313 private elementary schools (119,894 pupils), 514 foreign primary schools (67,525 pupils), 155 vocational schools (17,984 pupils), 33 secondary schools (1,584 pupils). There was also a French university at Beyrouth (641 students), an American university and a college at Beyrouth (444

students), an Arab university at Damascus (356 students), an Arab academy, and agricultural colleges at Sélémié and Bekaa. The American institutions were closed in May, 1941. The composition of the population by religions was: Moslems, 1,514,755 (including 1,075,816 Sunni Moslems); Christians, 505,419 (including 186,676 Maronites, 151,328 Orthodox, 66,762 Greek Catholics or Uniate, 32,859 Armenians, 28,885 Melkites, 8,887 Protestants, 7,305 Armenian Catholics); Jews, 16,526.

Production. Agriculture and stock raising are the main occupations. Approximate normal production (in metric tons): Wheat, 600,000 (665,000 in 1940); barley, 375,000 (385,000 in 1940); corn, millet, and sorghum, 60,000 (58,000 in 1940); olive oil, 15,000 (18,000 in 1940); oats, 10,000; rice, 5,000; potatoes, 50,000; lentils, 35,000; chick-peas, 18,000; beans, 11,000; onions, 40,000; sesame, 4,500; grapes, 200,000; citrus fruits, 50,000; apricots, 30,000; bananas, 10,000; watermelons, 200,000; apples, 3,500; cotton, 30,000; hemp, 4,500; tobacco, 4,500; wool, 7,500. Livestock on Jan. 1, 1939: 2,631,000 sheep, 491,918 cattle, 90,030 goats, 80,168 camels, 182,234 asses. Gypsum, marble and other building stone are the only minerals produced, although recent reports indicate the presence of oil. Chief manufactures: Textiles, cement, macaroni, biscuits, soap, matches, beverages, and brushes.

Foreign Trade. Foreign commerce came practically to a standstill from June, 1940, to July, 1941, during which time trade agreements with Palestine (Syria's leading market), Trans-Jordan and Iraq became largely inoperative. Trade with the sterling area in the Middle East was renewed following the British-Free French occupation (see *History*). Including bullion and specie, imports in 1938 were 70,811,061 Syrian-Lebanese pounds (\$40,787,000) and exports 29,278,213 pounds (\$16,864,000). The transit traffic is important in peacetime.

Finance. Under the French mandatory administration, Syria and Lebanon had separate budgets and also a "common interests" budget covering customs, posts, telegraphs, etc. Actual receipts of the "common interests" budget were 12,237,189 Syrian-Lebanese pounds in 1938 and 7,742,500 in 1939. Estimated receipts of the Syrian Republic for 1940 were 11,746,000 pounds; of the Lebanese Republic, about 6,500,000 pounds. The Syrian-Lebanese pound (equal to 20 French francs), exchanged at \$0.576 in 1938, \$0.502 in 1939, and \$0.416 in the first half of 1940.

Transportation. Syria in 1940 had about 890 miles of railway line, providing connections with Palestine, Turkey, and Iraq, and about 7,100 miles of roads. Two companies operated motor bus services across the desert between Damascus and Baghdad. The air services (Tripoli-Marseille, Beirut-Damascus, etc.) were interrupted by the European War. Beyrouth is the chief port of call but Tripoli is used for the important transit trade and is the terminal of one branch of the oil pipeline from the Iraq oil fields.

Government. The French Government in 1936 concluded treaties of friendship and alliance with the governments of the Syrian and Lebanese republics, providing for termination of the French mandate and granting extensive powers of autonomy. The treaties were ratified by the parliaments of the two republics but failed to receive the approval of the French parliament. Subsequent political disorders caused the French High Commissioner in July, 1939, to suspend the constitutions of both the Syrian and Lebanese republics and to appoint councils to administer them under his

direction. Latakia and Djebel Druse continued to be administered by French governors, assisted by partly nominated and partly elected councils. Following the Franco-German armistice of June 22, 1940, the French authorities in Syria and Lebanon adhered to the Vichy Government (see *YEAR BOOK* for 1940, p. 727 f.). On Dec. 9, 1940, Marshal Pétain appointed Gen. Henri Dentz as High Commissioner and commander-in-chief of the French military forces in Syria and Lebanon. For developments in 1941, see below.

HISTORY

Native Disorders. General Dentz, newly appointed High Commissioner, arrived at Beirut toward the end of December, 1940, to find the territory seething with native discontent. The shortage of food-stuffs and other essential commodities was becoming more acute. Rapid inflation of the currency was under way. Recent British and Greek victories over the Italians in North Africa and Greece had increased hostility to the Italian and German armistice commissions in Syria and Lebanon and strengthened pro-British sentiment among the natives Combined with assiduous Axis propaganda, these same factors had greatly encouraged the long-standing agitation for independence.

Immediately upon his arrival, General Dentz attempted to end the strained relations between the French authorities and the native nationalists. In a visit to Damascus on Jan. 4, 1941, he announced that France was "determined to carry alone her mission in Syria," that he would maintain internal and external order and security, and that food rationing would be closely supervised. Within a week he was obliged to forbid public demonstrations in Beirut, where crowds sought to parade with banners demanding bread, sugar, and gasoline. Following numerous arrests of strike organizers and demonstrators, merchants closed their shops in a sympathy strike.

General Dentz then abandoned his efforts to conciliate the native political parties and undertook to reduce their influence. Military control was extended and administration assumed a more totalitarian form. Regulations increasing bread prices and calling for compulsory registration of wheat stocks provoked student demonstrations in Damascus beginning February 28. Quickly developing into a general strike, the demonstrations spread throughout Syria and Lebanon. At least four persons were killed in Damascus on March 8-9, when French troops broke up protracted rioting.

The disorders soon assumed a political complexion. Syrian nationalist leaders demanded the abolition of the separate administrative units into which the mandated territory was divided and the formation of an independent national government with all the powers granted in the unratified French-Syrian treaty of 1936. General Dentz made successive visits to Damascus to negotiate an understanding with them, but they flatly rejected his compromise proposals. The High Commissioner then instituted martial law in a number of towns to end the continued demonstrations and strikes. His effort to form a new Syrian Cabinet excluding the nationalists provoked a new wave of rioting on March 25-26. At least 12 persons were killed in Damascus and Aleppo when French troops fired on menacing crowds. Martial law was extended to all of the principal cities. Before order was restored the death toll mounted to 25, the wounded to more than 150, and the number under arrest to some 400.

On April 1 General Dentz in a Beyrouth radio broadcast announced his decision to form a new Syrian Government and appealed for an end to street demonstrations. He offered reforms, but indicated that the nationalists' demand for independence could not be granted. By a decree of April 4 Khaled Bey Assem, a Moslem leader acceptable to the nationalists, was appointed Premier of the Syrian Republic with authority to appoint his own Council of Ministers. He was granted full powers of administration subject to the advice of the Council of State appointed by the High Commissioner. These concessions seemingly made a favorable impression upon the Arab nationalists in the Syrian Republic and caused a marked improvement in the political situation. Somewhat similar changes were made in Beyrouth, where on April 6 the Christian Maronite leader, Alfred Naccache, formed a new Ministry for the Lebanese Republic, replacing that headed by President Emile Edde.

The economic situation remained critical, however, and Axis agents busily stirred up further discontent among Arabs and the various national minorities. More rioting by an armed mob in central Lebanon produced further bloodshed toward the end of April. About the same time there were new "flour riots" in northern Syria, in which five persons were killed, 20 seriously injured, and scores arrested. Early in May a fire attributed to sabotage did extensive damage to the small Tripoli refinery upon which Syria and Lebanon were exclusively dependent for gasoline and other petroleum products. The French Government's resignation from the League of Nations on April 25 helped to undermine the moral authority of the Vichy representatives in Syria and Lebanon.

Axis Penetration. The activities of Axis representatives and their native agents in Syria and Lebanon assumed a more menacing aspect following the German conquest of Greece and the outbreak of the Anglo-Iraqi hostilities on May 2 (see *IRAQ under History*). The German and Italian armistice commissions redoubled their pressure upon High Commissioner Dentz for collaboration with the Axis. Numerous German "tourists" and "business men" made their appearance. On May 15 it was learned that, with the consent of General Dentz, German military planes were using Syrian-Lebanese airports for refueling en route to aid the Iraqi Premier against the British. On May 17 it was reported from Turkey that several trainloads of munitions and supplies had been sent from Syria to Premier Rashid Ali Al-Gailani's forces in Iraq, and that the Germans were reconditioning the French planes and other war materials stored in Syria and Lebanon since the Franco-German armistice.

Beginning May 16 British and Free French planes based in Palestine and Trans-Jordan bombed and machine-gunned the Syrian airdromes in use by German and Italian planes. In a radio broadcast from Beyrouth on May 18, General Dentz warned that he would resist British "aggression" and would "reply to force with force." He admitted that some German airplanes flying over Syria "were forced to make landings" but said that "this privileged move by our former enemy was strictly within the terms of the armistice." Coming immediately after the announcement in Vichy that France had agreed to collaborate with Germany in the "new European order," General Dentz's statement was believed to presage immediate German occupation of Syria and Lebanon with the consent and assistance of the Vichy Government. There was an exodus of British,

American and Palestinian residents from the Lebanon. On May 20-21 British consular officials in the mandated territory were expelled by the High Commissioner Dentz in retaliation for the attacks on French airdromes. French anti-aircraft guns and pursuit planes were subsequently reported to have shot down several British bombers engaged on similar missions.

The decision of the Vichy Government and General Dentz to collaborate with the Axis powers reinforced de Gaulle and pro-British sentiment among French officials, officers, and civilians in Syria and Lebanon. The British and Free French at the same time redoubled their efforts to secure the repudiation of the Vichy Government by the French and native inhabitants of the mandated territory. In leaflets widely scattered over Syria and Lebanon by British planes, Gen. Georges Catroux, Free French commander in the Near East, urged Frenchmen to "shake off the enemy yoke" and unite the territory with the other French colonies adhering to Gen. Charles de Gaulle's movement. A number of resignations of French officials was reported and there were numerous desertions from General Dentz's military forces to join the Free French units in Palestine. Among the deserters was Col. Philibert Collet, popular organizer of noted Circassian cavalry units in France's Syrian army.

Allied Invasion. Evidence of dissension among French civil and military officials in Syria and Lebanon and the influx of German propagandists and technicians precipitated Allied intervention to forestall the German drive that was expected to follow the occupation of Crete. The British and Free French commanders apparently hoped that their attack would cause the prompt capitulation or collapse of the Vichy Government's authority in the mandated territory, but this conjecture proved unfounded.

On June 2 the French authorities in Syria and Lebanon severed all communications with British-held territories in the Near East. The next day General Dentz declared a state of siege throughout eastern Syria following the blowing up of several important railway bridges. There was a roundup of British agents and Free French sympathizers. In a radio proclamation on June 5 the High Commissioner urged his armed forces to defend the mandated territory to the last. Stating that France had determined "to modify her political line regarding Germany," he said the Germans had demanded that Syria be defended to the death as the price of Nazi guarantees to release French war prisoners and provide the French people with food.

There was steadily mounting tension until the British-Free French invasion began on the early morning of June 8. On June 4 British planes bombed oil storage tanks in Beyrouth. The British fleet established a blockade of the Syrian-Lebanese coast. Retaliatory bombing of Amman, capital of Trans-Jordan, by French planes occurred June 5.

The invasion of June 8 was accompanied by a propaganda barrage designed to win over both natives and French in Syria and Lebanon to the Allied cause. A proclamation by General Catroux to the inhabitants of Syria and Lebanon declared that in the name of Free France and its chief, Gen. Charles de Gaulle, he was assuming "the powers, responsibilities, and duties of the representative of France in the Levant." It continued:

In this capacity I come to put an end to the mandatory regime and proclaim you free and independent.

You will therefore be from henceforward sovereign and

independent peoples and you will be able either to form yourselves into separate states or unite into a single state. In either event, your independent and sovereign status will be guaranteed by a treaty in which our mutual relations will be defined. This treaty will be negotiated as soon as possible between your representatives and myself. Pending its conclusion our mutual position will be one of close unity in the pursuit of a common ideal and common aims.

General Catroux promised the people of Syria and Lebanon that if they rallied to the Allied cause the British would lift the blockade, permit the resumption of trade with the sterling bloc, and extend all the other "advantages enjoyed by free countries who are associated with them." The British Government, in simultaneous statements issued by Foreign Secretary Eden in London and the British Ambassador in Cairo, formally endorsed General Catroux's pledges to the people of the invaded territory. At the same time Gen. Sir Archibald Wavell, commander of the British Imperial forces in the Middle East, addressed an appeal to the French military forces in Syria and Lebanon to join the British and Free French armies in preventing the "grabbing" of the mandated territory by Germany. He warned that "all resistance on your part is in vain." These proclamations were scattered by Allied planes in leaflet form throughout Syria and Lebanon.

On the same day Marshal Pétain sent a message to "Frenchmen of the Levant" denying that France was preparing to deliver Syria and Lebanon to the Germans or that French sovereignty there was threatened by anyone except the British and Free French. He declared that there was not a single German soldier in Syria or in Lebanon and that the few Axis airplanes that landed there had virtually all left. The Allied proclamations apparently had considerable effect. The bulk of the native population welcomed the invaders, according to American correspondents, although Syrian newspapers questioned the value and sincerity of the Free French and British pledges. There were further desertions from the French forces, including the commander of the Lebanese armed units. However the professional French army obeyed the orders of its officers and opposed stiff resistance to the invaders. See *WORLD WAR* for a full account of the campaign.

In both Damascus and Beyrouth the natives pressed the French forces to evacuate those cities in order that they would not be destroyed or damaged in the fighting. Just before the Allies entered Damascus on June 21, after overcoming stiff resistance, the Premier of the Syrian Republic assumed by decree supervision over internal matters previously under the control of French officials. In Beirut anti-French demonstrations, rioting, and looting were reported among native troops and civilians. These grew in intensity as the Allied land forces approached and as General Dentz refused to withdraw his troops from the city and declare it an open town.

The Armistice. With Australian forces battering at the outskirts of Beyrouth and native disorders within the city, General Dentz on July 8 applied to the British for an armistice. The Vichy Government authorized the peace negotiations July 9. The British conditions called for the surrender by the Vichy forces of all arms and war material; a free choice for the Vichy troops between repatriation to France or joining the Free French forces; surrender to the Allies undamaged of all railways, ports, and communication facilities; the handing over of Germans and Italians for internment; the turning over of all warships for internment at Beyrouth; and the release of all Allied prisoners in Syria and Lebanon. The British also offered "com-

plete amnesty" to French troops in the mandated territory and reiterated the Anglo-Free French pronouncements of June 8 concerning Syrian-Lebanese independence and Free French representation of French interests in the Levant.

The Vichy Government on July 11 refused to negotiate with "traitors to their country like de Gaulle and Catroux," declared the British pledges regarding the emancipation of Syria and Lebanon to be null and void, and rejected the term "complete amnesty" as one of several that it considered "contrary to its interests and its dignity." However it authorized General Dentz to take whatever measures he considered necessary. Accordingly hostilities were ended at midnight of July 11. Headed by Gen. Jean de Verdillac, a delegation of French officers representing General Dentz met the British and Free French commanders, Lt. Gen. Sir Henry Matland Wilson and General Catroux, at Acre, Palestine, the next day. An armistice accord was initiated that night and signed July 14, following its ratification by the Vichy and London Governments.

The Armistice treaty made no mention of the political provisions governing the future of Syria and Lebanon that had been mentioned in the original British conditions. It provided for Allied occupation of all Syrian and Lebanese territories beginning July 15, British use of all airdromes and landing fields, the rendering of all honors of war to the French forces, and the cooperation of the Vichy military authorities "toward retrieving arms which may be found in the hands of the population" French schools, hospitals, religious missions and other institutions in the occupied territories were assured their rights would be respected. The British promised not to punish Syrian and Lebanese natives who participated in the hostilities either as soldiers or administrators. The other clauses of the armistice embodied the military conditions submitted by the British on July 9. A commission of 2 British, 1 Free French, and 2 Vichy representatives was established to supervise execution of the armistice terms.

Marshal Pétain, in a radio broadcast of July 14, cleared the ground for possible future restoration of the Vichy Government's sovereignty over Syria and Lebanon. He took the position that the British attack was unjustified and that France was bound to resist under the terms of the League mandate and the Franco-German armistice. The Vichy Government, he said, refused to accept the political conditions advanced by the British and Free French, and the Vichy forces in Syria and Lebanon had laid down their arms under duress.

The Allied Occupation. The elimination of Vichy's authority left the governmental situation in Syria and Lebanon unstable, with authority divided three ways. The maintenance of order rested primarily in the hands of British military tribunals operating under martial law. General Catroux, as Free French High Commissioner, took over the civil functions formerly performed by General Dentz. Lastly the native governments in Syria and Lebanon formed earlier in the year carried on with the same personnel, although their powers were curtailed upon the outbreak of fighting.

Friction soon developed between the British and Free French over their respective prerogatives and policies, while native nationalists pressed for prompt fulfillment of the Anglo-Free French promises of independence. The adjustment of these differences on a basis satisfactory to the three parties concerned was achieved without undue difficulty. On August 7 Oliver Lyttleton, the British Govern-

ment's political representative in the Middle East, in a letter to Gen. Charles de Gaulle, guaranteed the Free French "a predominant position in Syria and Lebanon over any other European power," including Britain. He stated that both Britain and Free France were pledged to the independence of these territories and that Britain had no interest there except to win the war.

At the same time the British were anxious to conciliate the natives as part of the larger problem of keeping the Arab countries friendly. To make the joint occupation as agreeable as possible to the native population and to maintain friendly co-operation with the Free French officials, the British established a special mission in Syria headed by Maj. Gen. Louis Spears. They pressed the Free French to carry out the promise of independence, and at the same time sought to lay the foundations for a federation of Arab states that would start with an economic union between Syria and Lebanon.

Independence of Syria and Lebanon. On September 16 General Catroux carried out the Free French pledge by proclaiming the independence of Syria. He announced that "Free France, acting in agreement with her ally, Great Britain, has undertaken to terminate the mandate and grant Syria the status of an independent sovereign State and to guarantee the new State by treaty." Thus the Free French undertook to carry out the general policy of the Franco-Syrian treaty of 1936 (see section on *Government*), which failed of ratification.

Sheik Taj Eddin el Hassani was named the first President of the independent Syrian republic. A government comprising some of Syria's leading nationalist politicians was formed September 20 under Premier Hassan Bey Hakim, with Faiz Bey Khoury, leader of the nationalist bloc in Syria, as Minister of Foreign Affairs. Most of the important native political groups were represented on the Cabinet, which was instructed by the President to work out "a complete statute of independence in full consultation with all public interests and sections of opinion." This statute was proclaimed September 27.

The predominantly Christian Lebanese, who favored independence under a French alliance as a safeguard against Arab and Moslem control, received similar assurances from the Free French. A proclamation of the independence of the republic of Lebanon was then issued at Beyrouth November 26.

In addition to the grant of political independence, the two republics obtained substantial relief from acute economic difficulties. Resumption of trade with Allied-controlled countries, heavy expenditures by the Anglo-Free French forces, and shipments of food and other supplies to the natives of Syria and Lebanon by the British Government and the American Red Cross eliminated much suffering and even produced a trade boom. These developments won increased support for the Allied cause among Syrians and Lebanese, and lessened the danger of native support for an Axis invasion of the Middle East. To meet the threat of a German drive through Turkey, the British and Free French built up a strong military force in Syria, Lebanon and adjoining territories during the latter half of the year. The Free French forces were strengthened by numerous enlistments of professional soldiers formerly under the command of General Dentz.

Completion of Armistice Terms. Completion of the terms of the armistice convention of July 14 was announced by the Commission of Control on Octo-

ber 8. Charging that Vichy military authorities violated the armistice terms in several respects, notably through failure to release all officers of Allied forces captured during the campaign, the British on August 8 arrested General Dentz and 35 of his officers in Tripoli and held them until the return of Allied officers taken to France. General Dentz was permitted to return to France early in September.

See EGYPT, GERMANY, and GREAT BRITAIN, under *History*; WORLD WAR.

SYRIAN ANTIQCHIAN ORTHODOX CHURCH. See RELIGIOUS ORGANIZATIONS.

TAHITI. See FRENCH OCEANIA.

TAIWAN. See FORMOSA.

TAJIK SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

TANGANYIKA TERRITORY. A region in East Africa administered, since 1919, by Great Britain under a League of Nations mandate; formerly known as German East Africa. Area, 374,131 square miles, including 20,000 square miles of inland waters. Population (1939), 5,283,893 (5,243,167 natives, 32,801 Asiatics, and 7,925 Europeans). Dar es Salaam (capital), had 33,147 inhabitants.

Production and Trade. Sisal, coffee, cotton, groundnuts, sesame, and copra were the main agricultural crops. Other important products were gold (219,513 troy oz. in 1940), diamonds, ghee, hides and skins, and timber (pencil cedar, mahogany, ebony, etc.). Livestock (1939): 5,190,168 cattle, 1,716,005 sheep, and 2,906,655 goats. Trade (1939): £3,039,673 for imports (cotton piece goods, foodstuffs, iron and steel manufactures, gasoline, and kerosene were the main items) and £4,585,658 for exports (sisal £1,223,477, gold £980,346, cotton £557,358, and coffee £466,026). Shipping (1939): 460 steamers of 2,161,270 tons entered the ports. Roads (1940): 22,356 miles.

Government. Budget estimates (1941): £2,249,000 for revenue and £2,319,000 for expenditure. The administration is under the control of a governor, assisted by an executive council. There is a legislative council of 13 official members and not more than 10 nonofficial members. Governor-designate, Sir Wilfred Jackson who was expected to assume office during January, 1942.

History. It was announced during October, 1941, that British military authorities had decided to reconstruct the Great North Road in eastern Equatorial Africa from the Northern Rhodesia border through Tanganyika for 810 miles and then through Kenya for 118 miles to Nairobi. The road will be constructed so as to render it fit for traffic at all seasons of the year. The government of Tanganyika agreed to receive 5,000 Italian nationals from former enemy territories in East Africa (3,000 will be accommodated in a central camp at Tabora and 2,000 in smaller camps attached to Roman Catholic missions). See KENYA under *History*.

TANGIER. A former internationalized district in northwestern Africa, including the port and city of Tangier, situated 15 miles across the Strait of Gibraltar from the British fortress. The Tangier Zone was occupied by Spanish troops on June 14, 1940, and was formally incorporated in Spanish Morocco the following November 23 (see YEAR BOOK for 1940, p. 729). Area, about 225 square miles; estimated population, 80,000—mostly Moslems but including some 17,000 Europeans and

7,000 Jews. The city of Tangier had about 45,000 inhabitants.

Commerce, agriculture, fishing, and cigarette-making are the chief occupations. Leading crops are wheat, barley, and chickpeas. Imports in 1938 were valued at 94,693,830 French francs; exports, 11,380,286 francs. A French-controlled railway connects the city of Tangier with Fez, French Morocco, and with the French North African railway network. Highways and roads extend about 65 miles. Budget estimates for 1939: Receipts, 29,795,500 francs; expenditures, 29,653,312 francs.

Tangier was demilitarized, neutralized, and placed under the control of an international commission under the General Act of Algeciras of 1906, a series of agreements concluded in 1911 and 1912, a convention signed by Great Britain, France, and Spain on Dec. 18, 1923, and a protocol added to the convention on July 25, 1928. The protocol accorded Italy almost equal rights with the other three signatory powers in the administration of Tangier. For the international government established under the Tangier Convention, see *YEAR BOOK* for 1940, p. 729. This system was abolished following the Spanish occupation. The French administrator was replaced by a Spaniard, Dr. Emanuel Amieva.

History. Following the course described in the preceding *YEAR BOOK*, the Spanish authorities on Dec. 14, 1940, dismissed British, French, and Italian employees of the former international administration and assumed charge of Tangier's finances, health, and public works. The British Government immediately reserved all its rights under the Tangier Convention. After lengthy negotiations, an Anglo-Spanish agreement on Tangier for the duration of the European War was announced Feb. 26, 1941. Britain recognized Spain's dominant position in Tangier, while Spain gave formal assurance that Tangier would not be formal. The Franco Government also undertook to accept international control of commercial matters, respect the personal rights of British subjects in Tangier, and guarantee the continued functioning there of existing British organizations and the British press.

Meanwhile Spain by a decree of Feb. 10, 1941, had assumed complete supervision of Tangier's economic, commercial, and monetary relations with foreign countries. Exchange control was instituted, but foreign currency was permitted to circulate. The Spanish authorities followed this on March 16 by ousting the Mendoub, appointed by the Sultan of Morocco to supervise native affairs in the Tangier Zone. He was replaced by a Spanish-appointed native Pasha. The Mendoub's palace was reconverted into a German consulate, and on March 17 the German flag was raised in Tangier for the first time since World War I.

This incident symbolized the displacement of Italian by German influence at Tangier. Mussolini's representatives early in the year had indicated their intention of taking over Tangier as partial payment for Italian aid to General Franco during the Spanish civil war. In February, however, a German mission was reported to have arrived in Tangier and to have taken over indirect control of its affairs with the reluctant acquiescence of both Spaniards and Italians. Economic conditions in general and the food shortage in particular became progressively worse during 1941.

See *SPAIN* under *History*.

TANKAGE. See *GARBAGE AND REFUSE DISPOSAL*.
TANKER SHORTAGE. See *PETROLEUM COORDINATOR FOR NATIONAL DEFENSE*.

TANKS. See *MILITARY PROGRESS; MOTOR VEHICLES; WORLD WAR*.

TANNU TUVA. A protectorate of the Soviet Union, nominally an independent republic, situated in Central Asia between Siberia and Outer Mongolia. Area, about 64,000 square miles; population, estimated at 65,000 (50,000 Tuvinians, 12,000 Russians, and 3,000 Chinese and Mongols). Capital, Kizilkhoto (Krasny in Russian), with about 10,000 inhabitants. The natives are engaged mainly in pastoral pursuits.

TARIFF COMMISSION, U.S. The Tariff Commission was created to serve the Congress and the Executive by supplying information on tariff and other problems relating to international trade and international trade policies. (See *YEAR BOOK* for 1940 for information concerning its functions.)

During the past year, the foreign trade problems facing the United States have arisen chiefly from war conditions and from the necessities of national defense. In this situation, the Commission, as would be expected, has changed the emphasis of its work. The demands of the defense agencies on the facilities of the Commission and work on special trade problems arising in a war economy have at times overtaxed its staff and have resulted in a greater volume of work in the past year than at any period in its history. However, it has continued to gather, analyze, and organize data on foreign trade and foreign trade policies, on technical, tariff and other questions relating to import problems and import needs, and on domestic industry and its competition from imports.

The Commission's work on national-defense problems varies widely, but consists principally of technical and economic research, frequently including field work, consultation with and expert advice to defense agencies; cost-of-production investigations, usually necessitating special field inquiries; statistical compilations and analyses; and the service of its personnel on interdepartmental committees. Because of the type of information supplied and the purpose for which it is intended, the work done by the Commission on defense matters is as a rule confidential, and, therefore, no detailed account of it can be given. A few of the items covered by some of the studies are: Copper, long-staple cotton, foods, Douglas-fir-lumber industry, crude drugs, rubber, mica, wool textiles, raw silk and silk waste, cork, lend-lease purchase of fish, stock piles, priorities, factors affecting prices of certain commodities.

The Commission has continued its assistance to the Department of State in the work on the trade agreements program and its work for the Committee for Reciprocity Information. In the past year a supplementary trade agreement was concluded with Canada, and a new agreement was negotiated with Argentina. Negotiations were also undertaken for trade agreements with Uruguay and Iceland and a supplemental agreement with Cuba. (See articles on those countries.) Work on these agreements, however, represents only a small part of the total work on trade agreements. United States trade with practically all of the non-Axis countries has been reviewed in order to obtain the basic data for discussions of possible new trade agreements or revisions of those already negotiated. In fact, the Commission's activities on trade agreements, especially during the latter half of the year, were even greater than usual.

The data obtained by the Tariff Commission on various commodities are kept current so that the

information supplied to defense agencies and to the trade-agreements organization may be of the greatest value. For that reason, much field work has been carried on recently.

The Commission completed and issued during the past year its report on *The Foreign Trade of Latin America* and a report on *Latin America as a Source of Strategic and Other Essential Materials*. Shortly after issuance in July of the exchange-control regulations affecting Japan, the Commission issued a report on *United States Imports from Japan and Their Relation to the Defense Program and to the Economy of the Country*. Other reports include one on the *Possibilities of Producing Rubber in the United States and Rubber Conservation*, as well as one on *Earthen Floor and Wall Tiles* and one on *Hogs and Hog Products*. Approaching completion is a report on *German Trade and Trade Policies*.

There are pending before the Commission two investigations requested by the Senate. One of these, concerned with wood pulp and pulpwood, was initiated in August, 1939, but was later suspended because of the changes which took place in the trade soon after the war began. The investigation will be reopened whenever circumstances appear to warrant. Another concerns red-cedar shingles. This investigation is rapidly nearing completion. An investigation of the Puerto Rican needlework industry undertaken at the request of the Administrator of the Wage and Hour Division in 1940 was later discontinued. An investigation of wheat under section 22 of the Agricultural Adjustment Act of 1933, as amended, resulted in a Presidential proclamation placing an annual quota of 800,000 bushels on imports of wheat and a quota of 4,000,000 pounds of flour. A supplemental investigation of cotton under section 22 resulted in the President's exempting from quota restrictions imports of cotton having a staple $1\frac{1}{8}$ inches or longer. Another supplemental investigation was instituted by the Commission on Nov. 12, 1941, to determine whether import restrictions may be suspended on certain cotton and cotton-waste items. Under the so-called flexible provision (section 336) of the Tariff Act of 1930, an investigation on crab meat was instituted and completed during the year. As a result of this investigation, the duty on crab meat was increased by Presidential proclamation. See ECONOMIC WARFARE, BOARD OF.

RAYMOND B. STEVENS.

TARIFFS. See CUSTOMS, BUREAU OF; REGIONAL CONFERENCE OF THE RIO DE LA PLATA; TARIFF COMMISSION, U.S.

TASK FORCES. See MILITARY PROGRESS.

TASMANIA. See AUSTRALIA under *Area and Population*.

TAX ANTICIPATION NOTES. See PUBLIC FINANCE.

TAXATION. National defense outlays, which aggregated \$6,301,000,000 in the fiscal year ended June 30, 1941, were scheduled to reach \$23,996,000,000 in the fiscal year 1942. Although the Administration abandoned its original policy of meeting two-thirds of Federal outlays out of taxes and one-third by borrowing, nevertheless sharply higher Federal taxes were needed even to maintain the new policy, enunciated in the President's budget message in January, 1942, of defraying only 40 per cent of Federal expenditures by means of taxation.

The yields from Federal income taxes for the fiscal years ended June 30, 1940 and 1941 compared as follows:

FEDERAL INCOME TAX RECEIPTS
[Fiscal Years Ended June 30]

	1940	1941
Corporation Taxes	\$1,120,581,550.75	\$1,841,409,855.14
Individual Taxes	982,017,376.17	1,314,265,806.56
Total Income Taxes	2,102,598,926.92	3,155,675,661.70

The 1941 Revenue Act. The Revenue Act of 1941, which became law September 20, was designed to produce \$3,553,000,000 of additional revenue for the Treasury annually, a record for any one revenue measure. Congress did not adopt all of the proposals originally advanced by the Treasury, such as the elimination of the option to file a joint return for husband and wife and the compulsory use of the invested capital base exclusively in the computation of excess profits taxes.

The greatest change was effected by the law in the taxation of corporations. Excess profits taxes were imposed before, rather than after, the deduction of corporate normal taxes, the rates were raised from 25-50 to 35-60 per cent, and corporations using the invested capital base were allowed 8 per cent on the first \$5,000,000 and only 7 per cent on the balance of invested capital before determining their excess profits. Newly-invested capital was to be included at 125 per cent. The normal corporate income tax rate was made 24 per cent, with a surtax of 6 per cent on the first \$25,000 of net income and 7 per cent on the balance. The imposition of the surtax was designed to make interest on partially tax-exempt Government bonds subject to tax when held by corporations, since such interest is subject to surtaxes but exempt from normal taxes. Banks were especially affected by this surtax. The capital stock tax rate was raised from \$1.10 to \$1.25 per \$1,000 of declared value, and a new declared value was allowed for 1941.

Personal income taxes also were increased sharply, particularly upon the middle income brackets. The surtax was made applicable to all taxable income, instead of to taxable income in excess of \$4,000. On the first \$2,000 of surtax net income, the rate was made 10 per cent, as compared with the previous 4.4 per cent rate. On \$10,000 surtax net income, the surtax rate was made 29 per cent, as compared with 15.4 per cent formerly. The exemption for a head of a family was reduced from \$2,000 to \$1,500, and for single persons from \$800 to \$750. The withholding tax for nonresident aliens was raised from 16½ to 27½ per cent. An Optional Tax Chart was issued to permit taxpayers with gross incomes of \$3,000 or less to pay a tax computed for them as a round amount, the maximum being \$197 for single persons earning \$2,975 to \$3,000.

Estate and gift taxes were increased greatly. Thus, the net Federal estate tax on a net estate of \$100,000 was made \$9,500, as compared with a tax of \$4,620 that would have been payable under the old law. New excise taxes that went into effect October 1 included a 6 per cent tax on local telephone bills and a 10 per cent tax on long-distance telephone calls costing more than 24 cents; a motor vehicle stamp tax of \$5 a year; an admission tax of 1 cent for each 10 cents of admission charge; a tax of \$5 to \$200 on boats, and the imposition of the 11 per cent tax on club dues of more than \$10 a year, instead of the old \$25 minimum. Other excise and miscellaneous taxes covered by the law, with old and new rates, are given in the table at the top of page 644.

The Revenue Act of 1941 also provided for a joint Congressional committee, with the Secretary of the Treasury and the Director of the Budget as

Description of tax	Old	New
Automobile truck and bus chassis	2 1/2%	5%
Automobiles, etc.	3 1/2%	7%
Automobile parts	2 1/2%	5%
Brandy	\$2.75	\$4
Distilled spirits	\$3	\$4
Furs		10%
Jewelry		10%
Liqueurs, cordials, etc.	1 1/2%	3 1/2%
Matches, generally		2%
Matches, fancy wooden	5 1/2%	5 1/2%
Musical instruments		10%
Photograph records		10%
Photographic apparatus (not x-ray film)		10%
Playing cards	11%	13%
Radios, phonographs	5 1/2%	10%
Refrigerators, mechanical	5 1/2%	10%
Safe deposit boxes	11%	20%
Telegraph messages		10%
Tires	2 1/2%	5%
Tubes	4 1/2%	9%
Washing machines		10%
Wines, sparkling	3%	7%
Wines, sparkling	1 1/2%	3 1/2%
Wines, still	8%	8%
Wines, still	18%	30%
Wines, still	30%	65%

members, to recommend reductions in nonessential expenditures.

The annual yield expected from the new revenue law was to be obtained as follows, according to Treasury estimates:

Corporation tax changes	\$1,382,000,000
Individual income tax changes	1,144,000,000
Excise and miscellaneous taxes	847,000,000
Capital stock, estate and gift taxes	180,000,000
Total	3,553,000,000

The Administration sought to have another tax bill passed, both to raise more revenue and to effect "administrative" changes to eliminate what the Treasury regarded as inequalities in the law. Congress refused to take up the subject of taxation, however, until the 1942 session.

Federal Tax Policy. The curtailed supply of consumer goods and the rapidly expanding total of governmental expenditures centered attention upon the problem of preventing inflation through the curtailment of available purchasing power. This objective called for a modification of the New Deal policies designed to redistribute the national income and expand purchasing power among the lower income groups of the population. President Roosevelt made clear in his budget message, however, that there would be no reversal of the older policy of making the higher income groups and corporations bear the brunt of the tax burden. "The emergency does require measures of a restrictive nature which impose sacrifices on all of us," he stated. "But such sacrifices are themselves the most compelling argument for making progressive taxes more effective. The anti-inflationary aspect of taxation should supplement, not supplant, its revenue and equity aspects."

Among the tax changes favored by the Administration to carry out this policy of making the tax structure even more progressive in character were:

1. Taxation of future issues of State and municipal bonds.
2. Lower exemptions in estate and gift taxation.
3. Reexamination of "privileged treatment given certain types of business in corporate taxation." Existing depletion allowances for petroleum and mining companies and deductions of accrued interest, even if unpaid, from taxable income were among examples of such "privileged treatment" cited from time to time.
4. Taxation of all "excessive profits," even if not arising from the defense program. Secretary

of the Treasury Morgenthau suggested during the year that a tax of 100 per cent be levied on all profits in excess of 6 per cent on the investment, a proposal that evoked a storm of protest on the ground that it would penalize efficient managements and virtually eliminate the functioning of the profit motive in industry.

5. "Technical inequities and discriminations" were to be eliminated.

For the purpose of fighting the inflation danger, the major tax proposals advanced during the year were a withholding levy of 10 or 15 per cent on wages, salaries, and some other types of income, collected at the source, and a general sales tax. It was also suggested that the Social Security payroll taxes should be raised during the war period, both to provide additional funds that could be invested in Government securities immediately and to build up a reserve from which benefits could be paid those made idle by the curtailment of armament activity after the war. President Roosevelt stated unequivocally, however, that he opposed "the use of payroll taxes as a measure of war finance unless the worker is given his full money's worth in increased social security."

At the turn of the year, therefore, the tax policy of the Administration was still based on social reform far more than on the anti-inflation objective.

State and Municipal Taxation. Expanding industrial activity and increased employment increased tax collections of most States and municipalities. Such tax collections for 1941, with comparisons for the two preceding fiscal years, were estimated as follows:

STATE AND MUNICIPAL TAX COLLECTIONS
(in billions of dollars)

	1939	1940	1941	1942
Excluding Payroll Taxes	7.4	7.9	8.3	8.8
Including Payroll Taxes	8.2	8.7	9.2	9.8

States and cities were urged by Chairman Mariner S. Eccles of the Board of Governors of the Federal Reserve System not to reduce taxes generally, but to use the increased revenues to pay off debts and to build up reserves, so that they would be in position to launch enlarged public works and housing programs after the war to offset in part the decline in armament activity at that time. However, there was strong support in other quarters for reductions in State and municipal taxes, in view of the very sharp increase in Federal taxes to which all taxpayers were subject. In a number of States and cities, some tax reductions were effected.

Seven States increased alcoholic beverage taxes during 1941. Arkansas raised its tax on wines and brandies from 50 to 60 cents a gallon, and on malt liquors from 3 to 20 cents. The consumers' sales tax on beer was raised from \$3.50 to \$5. A tax of \$1.12 a gallon was imposed on spirituous liquors, and an additional consumers' sales tax of 3 per cent of the wholesale price of spirits. Florida raised her tax on alcoholic beverages, including wines, from 20 to 30 cents per gallon, with a further tax of \$2.40 per gallon on beverages containing more than 48 per cent alcohol by weight. Georgia, Illinois, North Dakota, South Carolina, and Texas also increased their taxes on spirits, wines, or both. These repeated increases in State and Federal liquor taxes caused concern in the trade, where it was feared that bootlegging would thus be stimulated. Delaware, on the other hand, reduced her wine tax from 40 to 25 cents a gallon.

Several States changed their chain store taxes. Florida's new chain tax law imposed a graduated tax of \$10 to \$400 per store on chains, based upon

the number of stores in the chain wherever located, with a supplementary tax of \$10 for each \$1,000 of merchandise inventory on the premises of each store or warehouse. Iowa exempted stores of chains operating solely in unincorporated villages, or where each store owned is within eight miles of every other store. Texas exempted from the chain store tax gasoline filling stations, at least 75 per cent of the business of which consists of selling, storing, or distributing petroleum products, and religious book stores. Utah imposed a graduated annual license fee for chain stores. The Minnesota Supreme Court upheld the graduated chain store and mail order tax in that State.

Eight States enacted use fuel taxes, the highest being 7 cents a gallon in Tennessee. Temporary gasoline taxes previously in effect were extended in eight States. Maryland imposed a tax of 5 per cent on investment and 2 per cent on other income of individuals, while Minnesota imposed a net income tax of 8 per cent on national and State banks, in lieu of all other bank taxes except real property taxes. New York, on the other hand, dropped the 1 per cent emergency tax on personal incomes for 1941 and thereafter, while South Dakota lowered its income tax rates. California proposed an amendment to the State constitution to levy an annual tax on insurers upon business done within the State, the rate on the premiums being set at 2.55 per cent for 1943 and 2.35 per cent after 1947.

In the field of railroad taxation, most attention was given New Jersey's new law, setting a flat tax of 3 per cent on railroad property and imposing a franchise tax based on earnings. Efforts were launched by Jersey City, however, to upset this law in the courts.

For detailed information, see UNITED STATES and articles on States under *Legislation*, TERRITORIES and countries under *History*. For effect on profits, see BUSINESS REVIEW under *Industrial Earnings*. For collections, see PUBLIC FINANCE. See also FASHION EVENTS, GARMENT INDUSTRY, FINANCIAL REVIEW under *Security Markets*; INSURANCE under *Life*; LIQUOR PRODUCTION, MOTOR VEHICLES under *Statistics*, MUSIC, TOBACCO, ETC.

JULES I. BOGEN.

TAXONOMY. See ZOOLOGY.

TECHNICOLOR. See MOTION PICTURES; PHOTOGRAPHY under *Motion-Picture Photography*.

TELEGRAPHY. Permissive legislation authorizing the merging and consolidation of the facilities of telegraph companies in the United States was recommended by a subcommittee of the Senate Interstate Commerce Committee after an extended series of hearings and investigations. Reported as representing the consensus of opinion of all classes of witnesses—labor, finance, management, government—the committee's report recommends consolidation of all telegraph facilities into two operating systems, one for domestic carriers and another for international carriers. The principal domestic carriers are American Telephone & Telegraph, Western Union, and Postal, mentioned in the order of their size and corporate strength. The impending financial collapse of Postal (in spite of a \$5,000,000 RFC loan in 1940) has been a large factor in precipitating the present situation. The Senate Interstate Commerce Committee has approved its subcommittee's report, and the next step required is the adoption by Congress of corresponding amendments to the Communications Act. Such would allow the telegraph companies to merge under stipu-

lated conditions and subject to the approval of the several government agencies regulating them, as telephone or electric-power utilities now may merge subject to the approval of the government agencies regulating them.

Typical of the defense and wartime problems met by the industry is the 30,000-mile printing-telegraph network established by Western Union for the Civil Aeronautics Administration to link 175 major airports and a hundred or so other related points for instant and simultaneous communication.

One of the most important technical developments of the year—said to be as important to telegraphy as frequency-modulation is to radio broadcasting—is known as the "varioplex." The varioplex system of telegraph operation makes a better and more flexible use of telegraph-line facilities possible. It provides each pair of stations connected together with an ever-ready two-way channel for the exchange of traffic, which channel through the medium of electro-mechanical devices automatically adjusts its capacity to meet the needs of the moment.

Newly established international radiotelegraph circuits include: a link direct to Brazzaville, French Equatorial Africa (supplementing circuits now operating to Monrovia, Liberia, to Leopoldville, Belgian Congo, and to Cairo, Egypt), to Australia, establishing direct communication to the Pacific continent for the first time; and a second circuit direct to Moscow. See CENSORSHIP, OFFICE OF; DEFENSE COMMUNICATIONS BOARD.

G. ROSS HENNINGER.

TELEPHONY. Record demands for telephone service in 1941 brought an estimated total of 1,750,000 new telephones into service in the United States, boosting the grand total to a new high estimated at 23,620,000. The Pearl Harbor attack by the Japanese Dec. 8, 1941, made that day by far the busiest day in the entire history of long-distance telephone service. The long-lines department of A.T. & T. reported a total of 188,000 long-distance calls over its facilities for that day, which was Sunday at that. For the year the total number of long-distance calls increased by about 30 per cent over 1940, when the figure was 1,030,000,000. In terms of daily long-distance traffic, A.T. & T. reported the average at the close of 1941 to be from 40 to 50 per cent higher than at the beginning of the year; total average daily calls increased from 79,000,000 in 1940 to about 85,000,000 in 1941. Although its conversion and replacement program had come virtually to a standstill because of wartime shortages in strategic materials, A.T. & T. reported that by the close of the year it had installed some 950,000 new dial-operated lines, bringing the system total to about 63 per cent dial-operated. About 80 per cent of the telephone instruments in service are the modern handset. Total new telephone plant added by A.T. & T. during the year amounted to about \$420,000,000, and would have been much more if equipment had been procurable.

The International Telegraph and Telephone Corp. reported that for its properties in nine nations, most of them in South America, the net increase in telephones for the first nine months of 1941 was a total of 39,460 in spite of the shortage of much essential equipment. Early in the year the telephones in La Paz, Bolivia, were added to the South American network which now interconnects some 800,000 South American telephones and gives them access to direct international connections to other parts of the world. Largely driven by war condi-

tions in Europe, this company enlarged its manufacturing subsidiary in the United States by purchase of the Federal Telegraph Company from the Mackay Corporation, and creating the International Telephone and Radio Manufacturing Corporation to manufacture equipment for the South American field. These manufacturing operations were of financial importance to I.T. & T. in 1941. The total number of telephones in the Americas south of the United States is estimated at 1,365,000.

The telephone industry has been a leader in turning its research and engineering resources toward the development and use of substitute materials and toward extensive salvage and re-use of equipment. The industry is faced with the double problem of providing general communication services for growing industrial, commercial, and military uses, and at the same time providing an enormous amount of special field equipment for land, sea, and air fighting forces.

More than a million circuit-miles were added to United States facilities for long-distance telephone service, double the large amount added in 1940. As previously, about half of this expansion was effected on existing open-wire or cable lines by adding carrier equipment which enables a single pair of conductors to carry several separate conversations simultaneously. The project of building a 1,600-mile twin-cable line from Omaha, Neb., to Sacramento, Calif., has been completed westward to Laramie, Wyo. The 600-mile section between Omaha and Laramie, with a branch from Cheyenne to Denver, was placed in operation in December. Work is being rushed at several points along the remaining 1,000 miles between Laramie and Sacramento, with the object of completion by the end of 1942. The eastern long-distance cable system was extended westward to Omaha in 1931, and the \$20,000,000 line from Omaha to Sacramento will give the nation its first transcontinental all-cable telephone route. When this route is completed, it will provide about 100 transcontinental circuits and represent an increase of about 50 per cent over the number of such circuits available at the close of 1941.

Overseas radiophone service expanded by about 70 per cent over 1940 levels, largely to Pacific and Latin-American destinations. Ship-to-shore radiophone services were expanded to include a total of more than 3,400 ships. Important new radiophone links established during the year include a direct circuit between New York and Lisbon and a 4,615-mile radiophone link direct with Moscow. Other such links now operating include London and Buenos Aires, Tokyo and Berlin having been cut off.

Midyear negotiations between FCC and A.T. & T. resulted in a reduction in long-distance rates equivalent to about \$14,000,000 per year. A long-range program of telephone regulation was initiated as a permanent joint effort of FCC and State commissions, with the first joint studies announced to be directed toward problems incidental to the separation of interstate and intrastate properties. The first work is being done by a joint committee of FCC and State-commission accountants and engineers, with the expectancy that representatives of the telephone industry might be invited into collaboration later. See CONSUMERS' COOPERATIVES; DEFENSE COMMUNICATIONS BOARD; TAXATION.

G. ROSS HENNINGER.

TELETYPEWRITER SERVICE. See TELEGRAPHY.

TELEVISION. For a list of television broadcasting stations, see RADIO.

TEMPERANCE ORGANIZATIONS. See SOCIETIES.

TEMPORARY NATIONAL ECONOMIC COMMITTEE (TNEC). See UNITED STATES under *Congressional Investigations*.

TENNESSEE. An east south central State. Area: 42,246 sq. mi., including 285 sq. mi. of inland water. Population: (1940 census) 2,915,841. The urban population comprises 35.2 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 17.3 per cent (U.S. average, 10.2); elderly (65 years and over), 5.9 per cent. Tennessee ranks 34th among the States in area, 15th in population, and 16th in density, with an average of 69.5 persons per square mile. The capital is Nashville with 167,402 inhabitants; largest city, Memphis, 292,942. There are 95 counties, and 12 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education, there were 637,920 pupils enrolled in the State School System of Tennessee during the school year 1937-38. Of this total, 540,274 were enrolled in kindergartens and elementary schools and 97,646 in secondary schools; 107,759 were in separate Negro schools. The instructional staff comprised 22,367 persons, who received an annual average salary of \$726 (U.S. average: \$1,374); 5,128 or 25.5 per cent were men. Expenditures for all public schools in 1937-38 were \$24,288,427, making a total cost per capita of \$8.30 (U.S. average: \$17.15). School buildings (1936 count) numbered 5,966; there were 2,684 one-room, one-teacher schools (1938). The value of public property used for school purposes was \$51,588,794. For higher education, see under *Tennessee* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 7,564, of which 7,519 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 459,170; 377,316 were private and commercial automobiles, and 70,667 trucks and tractor trucks. Gross motor-fuel consumption was 327,055,000 gallons. Net motor-fuel tax receipts were \$22,320,000, the rate being seven cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$5,330,000.

Railways of all classes extended 3,594 miles (Dec. 31, 1939), 1.53 per cent of the total mileage in the United States. Class I steam railways (2,706 miles) reported 13,504,812 tons of revenue freight originating in Tennessee in 1940 and 16,331,270 tons terminating in Tennessee. There are 21 airports and landing fields in the State (13 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 288 civil aircraft in the State and 1,482 airline transport, commercial, and private pilots (1,255 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 6,339,600, as compared with 6,280,000 acres in 1940. According to the latest census, there are 247,617 farms, valued at \$664,474,267, averaging 74.7 acres each. Farm population numbered 1,276,437 or 43.8 per cent of the total. Leading crops with production in 1941 were: Corn, \$52,211,000, 69,615,000 bu.; cotton lint, \$50,100,000, 600,000 bales; hay \$25,850,000, 2,182,000 tons; tobacco, \$20,200,000, 91,523,000 lb.; cottonseed, \$12,549,000, 267,000 tons; wheat, \$5,740,000, 5,415,000 bu.

Manufacturing. The total value of manufactured products, according to the latest census, was \$728,-

087,825 for the year 1939; 2,289 establishments employed 131,874 wage earners who received \$109,661,769 in wages for the year.

Mineral Production. The chief mineral products, in order of value, were in 1939 (with 1940 figures in parentheses): Coal, 5,280,000 short tons valued at \$10,402,000 (6,010,000 short tons); stone, 5,626,210 short tons, \$8,312,977 (5,604,170 short tons, \$6,874,710); cement, 3,677,116 bbl., \$5,613,477 (3,766,807 bbl., \$5,655,635). The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$40,119,893 or .95 per cent of the total for the United States.

Trade. According to the 1940 census there were 2,656 wholesale establishments in Tennessee, employing 23,171 persons, reporting net sales for 1939 of \$839,529,000 and annual pay roll of \$31,353,000. There were 28,198 retail stores with 71,869 employees, reporting sales of \$606,489,000, and pay roll of \$55,924,000. Service establishments numbered 9,415, employing 20,037 persons for \$13,632,000 per year, and reporting a business volume amounting to \$44,037,000. The leading business center of the State is Memphis which reported wholesale sales of \$433,254,000, retail sales of \$135,486,000, and \$12,558,000 for its service establishments. Nashville reported sales of \$127,347,000 wholesale and \$80,389 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Tennessee was \$37,302,000. Under the Social Security program financed by Federal funds matching State grants, 40,154 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$10 15 (U.S. average pension, \$21 08); 35,921 dependent children in 14,343 families received average monthly payments of \$18.59 per family (U.S. average, \$32 73); and 1,645 blind persons received \$11.19 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered approximately 2,600 and received an estimated total payment of \$15,000.

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 7,762 (\$514,000); NYA student work program, 1,580 (\$11,000); NYA out-of-school work program, 11,760 (\$186,000); WPA, 29,449 (\$1,396,000); other Federal emergency projects, 50 (\$4,000); regular Federal construction projects, 23,886 (\$3,365,000). The Farm Security Administration certified subsistence payments totaling \$7,000 for the month to 122 cases.

Legislation. The General Assembly convenes in regular session the first Monday of January in odd years. It is composed of 33 Senators (29 Democrats and 4 Republicans in 1941) and 99 Representatives (83 Democrats and 16 Republicans).

The 72d session of the State Legislature was the second one under the present Governor. Both houses were predominantly Democratic and there was very little partisan legislation and few partisan fights. The session lasted for 41 days, 34 days less than the period set by the State constitution. It was said that the session was unequaled for absence of debate, oratory, or plain open discussions on proposals that were submitted to it. There were 1,151 bills introduced in the House and 81 in the Senate, approximately 400 less than were introduced in the 67-day session of 1939. Of the total passed by both houses, Governor Cooper signed approximately 110 general bills. Following is a brief summary of important enactments:

A million dollar bond issue voted to be used by the Governor in purchasing any lands necessary for the National Defense program.

Creation of a Tennessee State Guard to serve while the National Guard is in the Federal service.

A Sabotage Prevention Act for the safeguard of all National Defense projects established in the State.

An Act to permit National Defense workers to live in Federal Housing projects even though their incomes exceed those set up for the State.

A new half-million-dollar tuberculosis hospital.

Vital Statistics Act brought up to date.

Removal of 10 cents per pound tax on oleomargarine made from domestic oil.

First State-wide uniform State Game and Fish law.

Improvements in Unemployment Compensation and Workmen's Compensation Laws.

The State was redistricted for Congressmen, to make way for another representative, with Davidson County being declared one district. Only the Middle Tennessee counties were affected.

A bill to increase public school funds, advocated by the Tennessee Educational Association, was adopted only in part. The Governor is to retain the right to impound such funds.

A bill to increase the salaries of judges throughout the State was defeated.

The much discussed poll tax repeal bill was defeated early in session.

Finances. Total tax collections in Tennessee for the fiscal year ending in June, 1941, were \$55,309,000 (1940: \$51,826,000). Total sales taxes amounted to \$27,865,000, including motor fuel, \$22,534,000. Taxes on specific businesses ran to \$4,603,000, general and selective property, \$1,284,000, unemployment compensation, \$9,216,000. The net income taxes were \$3,694,000. Cost payments for the operation of general government totaled \$45,271,000 in 1939, the latest year available. (Revenues for the general government for that year were \$64,153,000.) Cost of operation per capita was \$15.74. Total gross debt outstanding in 1941 was \$95,120,000, as compared with \$94,601,000 in 1932.

Officers and Judiciary. The Governor is Prentice Cooper (Dem.), inaugurated in January, 1941, for a two-year term. Secretary of State, Joe C. Carr; Attorney General, Roy H. Beeler; State Treasurer, John W. Harton, State Comptroller, Robert W. Lowe. Chief Justice of the Tennessee Supreme Court is Grafton Green; there are four associate members elected by popular vote for eight-year terms. See FIRE PROTECTION.

TENNESSEE VALLEY AUTHORITY. See DAMS; FLOOD CONTROL; MUNICIPAL OWNERSHIP.

TENNIS. Highlights of 1941 in tennis were the successful effort of Robert L. Riggs, Jr. to regain the men's national tennis championship, and the final attainment of the women's national crown, after fifteen years' perseverance, by Mrs. Sarah Palfrey Cooke. Riggs, who lost the championship to Donald McNeil in 1940, climbed back onto his steed of victory and galloped over Frank L. Kovacs, in four sets, in the final round of the championship matches at Forest Hills, New York. Mrs. Cooke, the first native woman of the East to win the crown since 1908, literally proved that "all comes to those who wait," as she triumphed over Pauline Betz of Winter Park, Fla., to win the trophy she had so long coveted. Kovacs joined with Riggs when the champion turned professional and went on tour, managed by the young football professional, Alexis Thompson.

Curiously enough, after all the "experts" had forecast a general let-down for tennis in 1941, as a result of cancellation of international tennis, and the entrance of Alice Marble and Mary Hardwick into the professional ranks, interest did not fall off. Ladislav Hecht, formerly of Czecho-Slovakia, and Francisco (Pancho) Segura of Ecuador, supplied

a needed bit of seasoning to the play by giving it a touch of internationalism. Segura played one of the most brilliant matches of the year, equaled only by the Riggs-Ted Schroeder semi-final, against Bryan (Bitsy) Grant in the championship.

The national doubles championship was held onto by Schroeder and John Kramer. Mrs. Cooke and Margaret Osborne captured the women's doubles, and Mrs. Cooke and Kramer took over the mixed doubles title. Budge Patty of California won the national junior championship. Joe Hunt of the U.S. Naval Academy possessed the national intercollegiate title, but was not able to enter the national championships. Frank Parker won the clay-court title, and Arthur Macpherson, New York, became the new holder of the veterans' championship. Jacques Brugnon and Meade Woodson, both of California, won the veterans' doubles. Mrs. William V. Hester, Jr., Long Island, was returned leader of the women's veteran title, while Edith Sigourney and Mrs. George Wightman of Boston took the doubles veterans' honors.

Other champions with their titles were: clay-court doubles—John Kramer and Ted Schroeder. Women's clay-court singles—Pauline Betz. Women's clay-court doubles—Jane Stanton and Barbara Brandt. Intercollegiate doubles—Ted Olewine and Charles Mattmann. Women's intercollegiate singles—Katherine Hubbell. Women's intercollegiate doubles—Barbara Brandt and Katherine Hubbell. National indoor champions were: Men's singles—Frank Kovacs. Men's doubles—Don McNeill and Frank Guernsey. Women's singles—Pauline Betz. Women's doubles—Dorothy May Bundy and Pauline Betz. Mixed doubles—Al Stitt and Pauline Betz. Professional championships were won by Fred Perry in the singles, after a hard match with Donald Budge, and by Budge and Perry in the doubles.

TERMITES. See ENTOMOLOGY, ECONOMIC.

TEXAS. A west south central State. Area: 267,339 sq. mi., including 3,695 sq. mi. of inland water, but excluding Gulf of Mexico coastal waters, seven sq. mi. Population: (1940 census) 6,414,824. The urban population comprises 45.4 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 14.5 per cent (U.S. average, 10.2); elderly (65 years and over), 5.4 per cent. Texas ranks first among the States in area, sixth in population, and 35th in density, with an average of 24.3 persons per square mile. The capital is Austin with 87,930 inhabitants; largest city, Houston, 384,514. There are 254 counties and 44 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education conducted by the U.S. Office of Education, there were 1,355,401 pupils enrolled in the State School System of Texas during the school year 1937-38. The instructional staff comprised 47,386 persons, who received an annual average salary of \$1,013 (U.S. average: \$1,374); 9,271 or 21.0 per cent were men. Expenditures for all public schools in 1937-38 were \$90,504,275, making a total cost per capita of \$14.51 (U.S. average: \$17.15). For higher education, see under *Texas* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 22,567, of which 19,088 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 1,719,313; 1,342,861 were

private and commercial automobiles, 812 busses, and 350,440 trucks and tractor trucks. Gross motor-fuel consumption was 1,414,932,000 gallons. Net motor-fuel tax receipts were \$47,530,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$22,422,000.

Railways of all classes extended 16,425 miles (Dec. 31, 1939) 6.99 per cent of the total mileage in the United States. Class I steam railways (13,609 miles) reported 25,276,983 tons of revenue freight originating in Texas in 1940 and 25,480,904 tons terminating in Texas. There are 181 airports and landing fields in the State (53 lighted fields) and 12 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 1,278 civil aircraft in the State and 5,493 airline transport, commercial, and private (4,475 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 26,816,100, as compared with 27,787,200 acres in 1940. According to the latest census, there are 418,002 farms, valued at \$2,589,978,936, averaging 329.4 acres each. Farm population numbered 2,165,611 or 33.8 per cent of the total. Leading crops with production in 1941 were: Cotton lint, \$208,620,000, 2,745,000 bales; cottonseed, \$59,216,000, 1,226,000 tons; corn, \$49,496,000, 73,875,000 bu.; grain sorghums, \$43,254,000, 79,724,000 bu.; sweet sorghums, \$28,247,000, 4,154,000 tons; wheat, \$24,467,000, 27,186,000 bu.; commercial truck crops, \$17,433,000; rice, \$17,000,000, 13,600,000 bu.; oats, \$14,430,000, 37,975,000 bu.; hay, \$12,231,000, 1,551,000 tons; grapefruit, \$8,154,000, 15,100,000 boxes; peanuts, \$6,860,000, 171,500 lb.; potatoes, \$5,133,000, 6,039,000 bu.

Manufacturing. According to the latest census, the total value of manufactured products was \$1,530,220,676 (for the year 1939). For details, see 1940 YEAR BOOK.

Mineral Production. Texas ranks first among the States in value of mineral production. The leading minerals produced in 1939, in order of value, were: Petroleum, 483,528,000 barrels valued at \$478,330,000 (498,126,000 barrels in 1940); natural gas, 979,427,000 M cubic feet, \$141,535,000; sulfur, 1,784,952 long tons, \$28,498,473; natural gasoline, 770,047,000 gallons, \$25,807,000; cement, 7,207,001 barrels, \$12,152,780 (7,383,600 barrels, \$12,198,800 in 1940). The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$701,939,862, or 16.57 per cent of the total for the United States. See TIN.

Trade. According to the 1940 census there were 10,296 wholesale establishments in Texas, employing 64,479 persons, reporting net sales for 1939 of \$2,040,548,000 and annual pay roll of \$86,760,000. There were 85,249 retail stores with 209,841 employees, reporting sales of \$1,803,716,000 and pay roll of \$171,690,000. Service establishments numbered 31,575, employing 61,595 persons for \$41,473,000 per year, and reporting a business volume amounting to \$137,198,000. The leading business center of the State is Houston which reported wholesale sales of \$457,911,000, retail sales of \$193,965,000, and \$24,150,000 receipts for its service establishments. Dallas reported sales of \$475,454,000 wholesale and \$172,904,000 retail; Fort Worth, \$148,386,000 and \$92,976,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Texas was \$83,033,000. Under the Social Security program, financed by Federal funds matching State grants, 138,677 elderly persons were receiv-

ing (as of June, 1941) an average monthly old-age pension of \$18.50 (U.S. average pension, \$21.08); 230 dependent children in 90 families (figures are estimated and do not include Federal participation) received a total payment of \$680. General relief cases, which are supported by State and local funds only, numbered 9,503 and received \$8.72 per case (the average payment for 41 States was \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 14,886 (\$986,000); NYA student work program, 18,883 (\$129,000); NYA out-of-school work program, 22,378 (\$429,000); WPA, 73,850 (\$3,378,000); other Federal emergency projects, 150 (\$14,000); regular Federal construction projects, 30,668 (\$3,583,000). The Farm Security Administration certified subsistence payments totaling \$93,000 for the month to 3,444 cases.

Legislation. The Legislature convenes in regular session on the second Tuesday of January in odd years. It is composed of 31 Senators and 150 Representatives, all of whom are Democrats.

The longest session (171 days) of any Texas legislature ended July 3, 1941, having passed the largest appropriation measures and the greatest single tax law in the history of the State, according to information supplied through the courtesy of Doris H. Connerly, Texas Legislative Reference Librarian. Appropriations totaled more than \$93,000,000, a figure which exceeded by \$15,000,000 the appropriations of any previous session. To offset expenditures, a revenue bill designed to raise some \$25,000,000 in new money was passed. This new revenue law was referred to as the "Omnibus Tax Bill" as it included taxes in several fields, including new, or increased, occupation taxes. It was made necessary chiefly by the increase in amount of old-age assistance, extension of payments under social security laws to the blind and to dependent children, and the matching by the State of funds for teacher retirement. No income tax or general sales tax was resorted to, and Texas still does not have either of these two taxes.

A number of measures to aid in national defense were passed, including the creation of a Texas Defense Guard (numbering 15,000 by December, 1941); lease of lands to the United States for military purposes; encouragement of numerous local (city and county) airports; and making permanent the oil and gas conservation laws.

Other specific measures passed were the following: a stringent anti-strike law (sponsored by the Governor); removal of former limits on truck loads; strengthening of the drivers' license law; allowing divorce because of insanity; assertion of State sovereignty over coastal waters for 27 marine miles; prohibiting use of corporal punishment for the prison system; regulating outdoor advertising of alcoholic beverages; creating a cancer research hospital; creating a Texas Commission on Interstate Cooperation; extending State aid to junior colleges for the first time, prohibiting ticket scalping; and providing greater support for rural schools than ever before. An advertising tax for the rice industry was passed, on condition that the Arkansas and Louisiana laws would be effective, but the Arkansas law was held unconstitutional by the Supreme Court of that State.

There was one called, or special, session, at which only one general law was passed. This was an amendment and extension of the law which allocated part of the State gasoline tax to counties

and to road districts for local roads which become part of the State highway system.

Finances. Total tax collections in Texas for the fiscal year ending in September, 1940, were \$144,696,000. Total sales amounted to \$59,306,000, including motor fuel, \$45,948,000. Taxes on specific businesses ran to \$10,658,000, general and selective property, \$22,276,000, unemployment compensation, \$21,821,000. Cost payments for the operation of general government totaled \$130,133,000 in 1939, the latest year available. (Revenues for the general government for that year were \$188,187,000.) Cost of operation per capita was \$20.51. Total gross debt outstanding in 1941 was \$21,875,000, as compared with \$10,346,000 in 1932.

Officers and Judiciary. Governor W. Lee O'Daniel (Dem.) was inaugurated in January, 1941, for his second two-year term but subsequently resigned in order to succeed Morris Sheppard as U.S. Senator. The Lieutenant Governor is Coke R. Stevenson; Secretary of State, William J. Lawson; Attorney General, Gerald C. Mann; State Treasurer, Charley Lockhart; Comptroller, George H. Sheppard. Chief Justice of the Texas Supreme Court is James P. Alexander; there are two associate members elected by popular vote for six-year terms.

See AQUEDUCTS; FLOOD CONTROL; FLOODS; HURRICANES; NEGROES; PRISONS, PAROLE AND CRIME CONTROL.

TEXTILES. All production records were broken in textiles during 1941, due to the direct and indirect effects of the national defense program—and, after December 7, the national war effort. The result was that for the third successive year a new high was set. *Textile World's* index of mill activity for 1941 approximated 185, on a basis of 1923-25 as 100. This represented an increase of one-third over the index of 142 for 1940, which in turn was 8 per cent over 1939's index of 132, which in turn was 28 per cent over the 1938 index of 103. Just by way of comparison with a better known year, the 1929 index was only 115.

It was that same December 7—Pearl Harbor Sunday—that insured the continuation of the textile boom. For a few months prior to that time there had been indications, even though very much under the surface, of inventory accumulations in certain distributing channels which made probable the need for restraint in production levels. However, when war broke out, all such uncertainty vanished. It became then a question of how quickly the textile mills of the country could supply the vast quantities of military goods, and of industrial fabrics used by plants working on war orders.

The other side of this picture is a different one. Every step along the road toward the increase of textile production for war purposes means inevitable shrinking of the production of goods for civilian use. The situation is not nearly so bad in textiles as in some other industries because there is ample supply of some of the raw materials and also because so large a percentage of textile labor is female. Nevertheless, there is no question that the civilian phase of textile manufacture is facing a steady downward curve, which in fact has already started. As the tax burden becomes heavier, consumer indisposition to buy will probably be added to inability to find the goods.

Silk. The big news in textiles during 1941 concerned the one material whose use sharply declined, while consumption of other textile fibers increased. By its very exit from the scene, silk made news. On July 26, 1941, as the result of the increasing tension between Japan and the United States, the

American Government froze all stocks of raw silk—which meant that no more silk could be used by mills except that already in process.

The disappearance of silk focused attention upon three substitute materials for women's full-fashioned hosiery—nylon, cotton, and rayon. Nylon had made a most successful debut in this field in 1940. If there were an ample supply of nylon, there would be no hosiery problem. However, not only had the output in 1941 far from caught up to the need, but it became increasingly evident that the Government was going to require more and more of that material. Cotton is anything but a satisfactory substitute material for women's full-fashioned hosiery, and in any event the supply of cotton yarns fine enough for this purpose is extremely limited. That leaves rayon. Until nylon is available in sufficient quantity, the ordinary types of rayon will be the major substitute for silk in women's full-fashioned hosiery. It will cause many a headache at the start, due to inferior quality arising from inexperience in production technique. But it will have to do, in war-time.

Other Branches. The story in the other divisions of the textile industry was a story of unprecedented boom. Cotton consumption in 1941 exceeded that of 1940 by about one-third; wool consumption increased by at least one-half, filament rayon made a gain of about one-sixth; and rayon staple use increased about one-third. In wool, the outstanding result of the start of the war was the allocation of supplies of the raw material to mills, for 1942, restricted to a certain percentage of that used in 1941. In cotton, the prospect of continued shortage of certain grades and staples—and particularly those in most demand for some of the major types of military goods—furnished a paradox to the fact of the over-all surplus of cotton as a commodity. In rayon, the consumption was limited, and will continue to be limited for the duration, only by the quantity that can be produced.

Textiles in War. There are certain bottlenecks in textiles so far as the war program is concerned. There is not enough duck to go around and, even though more and more mills are being brought into the picture as manufacturers of that fabric, the situation will continue to be a tight one. Combed yarn supply is not adequate to meet both military and civilian needs, and consequently the latter will suffer. The same holds true in the wool branch, as previously indicated. By and large, however, there is no serious problem in textiles as a war industry. The bulk of the needs of the Army and the Navy will be supplied in ample time and in suitable quality. The man and the woman in the street will suffer, of course, but there is nothing new about that in war-time. Labor will be shoved around, and the return on capital will be sharply decreased, but these too are merely parts of a war picture.

See BUSINESS REVIEW under *Other Industries*; CHEMISTRY, INDUSTRIAL under *Textiles*; COTTON; FASHION EVENTS; NATIONAL BUREAU OF STANDARDS; WOOL.

DOUGLAS G. WOOLF.

THAILAND (Siam). A constitutional monarchy of southeastern Asia. Capital, Bangkok. King, Ananda Mahidol. The name Thailand replaced the former name, Siam, by official designation, effective from June 24, 1939.

Area and Population. Area, 200,148 square miles, excluding territory ceded by French Indo-China in March, 1941 (see under *History*). Estimated population on Mar. 31, 1940, 15,718,000 (14,464,489 at

1937 census). Bangkok, capital and chief city, had (1937) 886,150 inhabitants. Ethnically, some nine-tenths of the people of the kingdom are Thai (or Siamese) and Laos. The chief other stocks are Chinese (about 500,000), Malays and Indian (about 500,000 for both combined), Cambodians (60,000), and Europeans and Americans (some 2,000 only, but economically important). The prevailing and official language is Siamese.

Education and Religion. There is free and compulsory primary education, but only about 35 per cent of the adult population are literate. As of Mar. 31, 1939, there were 12,809 government, local public, and municipal schools, with a total of 1,567,745 pupils. Bangkok has two state-controlled universities. The religious composition of the population in 1937 was: Buddhists, 13,752,091; Mohammedans, 626,907; Christians, 69,227; others, 15,880.

Defense. There is compulsory military service for able-bodied males between 18 and 43. Prior to the outbreak of hostilities with French Indo-China in 1940, the army consisted of 26 infantry battalions, 4 cavalry regiments and 1 squadron, 3 battalions of anti-aircraft forces, 9 groups of artillery, and 2 battalions of engineers. The air force had 5 wings and the navy 4 gunboats, 3 sloops, 11 destroyers, 12 torpedo boats, 4 submarines, 2 minelayers, and various auxiliary craft. The defense expenditure estimate for 1941 was 52,308,822 bahts.

Production. In 1939, 83 per cent of the working population was engaged in agriculture and fishing. The chief crop is rice, which is both the main article of diet and the principal export. Production in 1939-40 was 3,420,347 metric tons of cleaned rice; exports in 1940, 1,656,300 tons valued at 127,-324,000 bahts. Other leading crops are tobacco, coconuts, pepper, and cotton. Rubber and tin ore are the most important products after rice. Thailand's international rubber quota for 1940 was 46,-300 metric tons; exports totaled about 43,000 tons. Tin output (1940) was 23,772 long tons and exports 24,080 compared with the export quota of 29,548 long tons. Teak exports rose in value from 7,246,863 bahts in 1939 to 9,544,160 bahts for the first eight months of 1940. Manufacturing is largely restricted to saw mills and rice mills.

Foreign Trade. Imports were 192,292,456 bahts (\$78,013,049) in the calendar year 1939 and 100,-560,741 bahts (\$33,376,110) for the first eight months of 1940. The 1939 exports totaled 206,939,-538 bahts (\$83,963,485) as against 169,672,451 bahts (\$56,314,286) for the first eight months of 1940. Rice, tin ore, rubber, and teak wood are the principal exports; cotton textiles and yarns, foods, iron and steel products, machinery, and electrical goods the principal imports.

Finance. The budget was changed to the Christian calendar year basis beginning Jan. 1, 1941. Including supplementary budgets voted in mid-year, ordinary budget estimates for 1941 balanced at 148,-718,657 bahts and extraordinary expenditure, to be taken from the Treasury Reserve, totaled 56,556,-333 bahts. The Treasury Reserve was 88,413,798 bahts on Sept. 30, 1940. The public debt on Mar. 1, 1940, was £6,269,530 (sterling). A 10,000,000-baht internal loan was authorized in December, 1940. The baht, pegged to sterling at 11 bahts = £1 (or \$0.3659 to the baht, in U.S. currency), exchanged at an average of \$0.4032 in 1939 and \$0.3515 in 1940.

Transportation. As of Mar. 31, 1940, there were 1,935 miles of state-owned railway line in operation and 113 miles under construction. During the preceding year, the lines carried 6,949,430 passengers and 1,442,146 tons of freight. Highways to-

taled 5,574 miles (see ROADS AND STREETS). Government-controlled airlines link the chief cities and foreign lines in 1941 connected Bangkok with the principal centers of East Asia. During 1939-40, a total of 960 vessels of 1,425,989 tons entered the port of Bangkok.

Government. The constitution of 1932 changed Thailand from an absolute into a limited monarchy. A Premier (in 1941 Luang Pibul Songgram) and a Council of Ministers, over which he presided, performed the executive functions but were responsible to an Assembly. Of the Assembly's members, half are elected, half appointed by the crown. King Ananda Mahidol, proclaimed in 1935 after the abdication of King Prajadhipok, is a minor. Save for the period from Nov. 15, 1938, to Jan. 13, 1939, the years of his reign have been spent at school in Switzerland. A Council of Regency exercises his powers; Prince Aditya Dihabha heads it.

HISTORY

Thailand, drawn into the orbit of Japan with increasing speed and violence in 1941, became an important part of the scene of Japan's warlike advance in the Far East. The Thai Government first employed Japanese favor to take territory from French Indo-China but soon found itself closely bound to Japan in foreign trade and threatened by Japanese forces on its French Indo-Chinese border. After vain efforts to gain protection by approaches to Great Britain and the United States, the country was invaded by Japan and forced into alliance with that power—forced in actuality to serve as a stepping stone for the Japanese advance to Singapore and into Burma.

War with French Indo-China. For an account of Thailand's invasion of the neighboring French possessions and of the subsequent terms of peace, see FRENCH INDO-CHINA, under *History*. By agreement

21,750 square miles, to which in part, at least, Thailand asserted claim of former possession.

Peaceful Envelopment by Japan. The same strategy of invasion without blows that had rendered Japan dominant in these French possessions even before the end of the invasion by Thailand now operated against Thailand itself. By the beginning of June, complaint was heard from Japan that Thailand had hurried off from signing the French peace to cultivate relations with Great Britain and the United States, regardless of Japanese interests. There soon followed word that Japan had bought Thailand's production of rubber. The Japanese influenced literature opinion during the summer by publishing in Bangkok, in the Thai tongue, the journal *Khaoparb*. The report spread that Japan would apply for territorial concessions. Japan obtained from the Government a grant of 10,000,000 bahts of credit to aid heavy purchases—almost monopolizing the Thai market—that the Japanese were making. Tokyo raised its legation at Bangkok to the rank of embassy in August and Thailand reciprocated. None the less the Legislative Assembly approved, September 5, a decree putting all the country's resources at the call of defense.

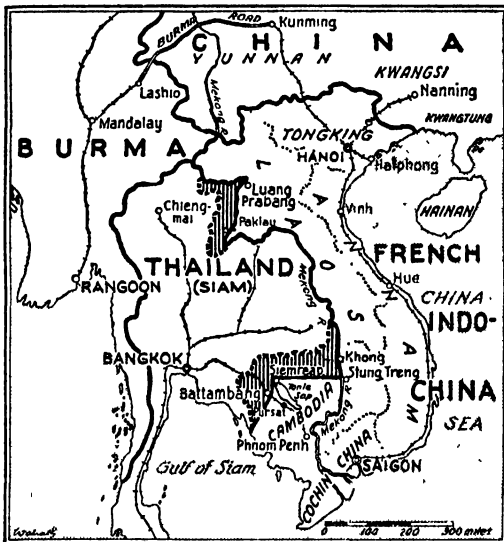
In the meanwhile the United States and Great Britain, taking note of signs in the Japanese press of prospective moves to introduce Japanese troops into Thailand, gave separate but simultaneous informal warnings, August 6, that such a move would be unacceptable. It then gradually appeared that in the face of the double warning the Japanese entry into Thailand, for which troops had reportedly stood in readiness, had been deferred. Thailand continued for a time to display acute alarm over the Japanese threat and of desire for support if invaded. Yet during the next few months the evidence of the Japanese design was so thoroughly covered up that within a few hours, at the most, of the actual invasion, Premier Songgram declared, December 6, "I do not see why any foreign power should invade Thailand." The Bangkok radio echoed him, expressing disbelief of aggressive intention on the part either of Great Britain or of Japan. On December 6, however, the Assembly gave the Premier absolute power, in regard to defensive measures, for 12 months.

Seizure by the Japanese. Japanese forces entered Bangkok December 8, shortly after 9 p.m. Troops had invaded Thailand by landings from the Gulf of Siam and by land from Cambodia. The Thai troops reportedly made some resistance, but most or all of them surrendered December 8. Japan's invasion of Thailand occurred at the very moment when the Japanese Government must have had word of the success of the bombing of Pearl Harbor, assuring a free hand for some time in the East Indies.

The Japanese Ambassador presented at 2 o'clock in the morning of December 8 a demand that the Thai Government give immediate way to Japanese troops moving against British Malaya. The Government sent out at 7:30 a.m. an order to all its troops to cease resistance.

Premier Songgram remained at the head of the Government. He was reported to be following a definitely submissive course with the invaders. Minister of Finance Sompoti and Foreign Minister Manudharm were expelled from the Cabinet. Dispatches indicated that they were loaded with the blame for opposition to the Japanese. British forces on the Burmese border made no serious attempt, in the brief time taken by the Japanese invasion, to move in and defend Bangkok.

Other Events. The death of Prajadhipok, former



Courtesy of The New York Times

THAILAND GAINS NEW TERRITORIES

Shaded areas were annexed from French Indo-China under protocol signed Mar. 11, 1941, in Tokyo

signed at Tokyo, March 11, France ceded to Thailand a bordering portion of Cambodia and a separate strip on the border of Laos (see map). By these Thailand gained in area a total estimated at

King of Siam, May 31, in England, removed an element of dynastic insecurity from the prospects of the existing Government. Diplomatic relations with Russia began in March. The Thai Minister to the United States on December 24 rejected his Government's submission to Japan.

See JAPAN under *History*; NAVAL PROGRESS; WORLD WAR.

THANKSGIVING DAY. See HOLIDAYS.

THEATER. Because the New York stage is the goal toward which virtually all new dramas and theatrical offerings of a professional nature in America are directed, its record is very closely representative of the achievement of the American theater in any given year. And although the creditable and successful productions were considerably outnumbered by the inferior and unsuccessful during the first half of 1941, and indeed until well toward the middle of the latter half, there were at least enough presentations of conspicuous merit in the course of the year to lift it above the level of mediocrity that had characterized its immediate predecessor.

The beginning was peculiarly ominous; the first play to make its appearance was one entitled *The Lady Who Came to Stay*—and she, or it, stayed for exactly four performances. In fact it was only upon the fifth attempt that a work with enduring qualities was brought to light in Joseph Kesselring's *Arsenic and Old Lace*, which continued uninterrupted and triumphantly throughout the year. In this piece dementia and homicidal mania as afflicting an entire family are made the subjects of farcically comic treatment, which was greatly enhanced by the acting of Josephine Hull, Jean Adair, John Alexander, and Boris Karloff as the abnormal elderly brothers and sisters. Next arrived *Mr. and Mrs. North*, a dramatization by Owen Davis concocted from Mr. and Mrs. Richard Lockridge's series of short stories about these characters. This proved a highly agreeable and amusing item as exemplified by Albert Hackett, Peggy Conklin, Owen Davis, Jr., son of the adapter, and several comparably clever associates, and remained current until summer. Then came a musical revue, *Crazy with the Heat*, the outcome of collaboration by a small army of names largely new, which struck a snag and was withdrawn at the end of its first week but presently reappeared and persisted for nearly 100 performances. January's final offering was *Lady in the Dark*, a unique blend of drama, musical comedy, and revue with Moss Hart figuring as author, Ira Gershwin as lyricist, and Kurt Weill as composer. Gertrude Lawrence was the star and her versatile range of talent readily spanned the demands of a particularly exacting role, that of a lady who seeks a solution of her romantic bewilderment in psychoanalysis. Others involved in the intricacies of the plot were Danny Kaye, who later in the year became a star in his own right on the strength of his contribution to the proceedings, Bert Lytell, Victor Mature, of the screen, Margaret Dale, and Macdonald Carey. This also, except for a summer vacation, continued to be a huge success throughout the year.

Just short of three weeks was the career of Louis D'Alton's modern miracle play, *Tanyard Street*, presented with Margo, Arthur Shields, and Barry Sullivan in its chief parts; and still shorter that of Philip Barry's allegorical *Liberty Jones*. But a very light comedy by Francis Swann entitled *Out of the Frying Pan*, peopled by an array of fresh young talent, scored something over a hundred showings. Lincoln's Birthday brought one more of the year's

outstanding, and outlasting, successes in Rose Franken's *Claudia*, a work centering about the character of a young wife whose affections are too evenly divided between her husband and her mother but to whom a crisis brings a proper sense of responsibility. Dorothy McGuire, a recent newcomer, portrayed the title role with great credit, Donald Cook was the husband, and Frances Starr effected a most happy return to the stage in the part of the mother. February saw also a new comedy by the usually dependable S. N. Behrman, *The Talley Method*, but this one, even with Ina Claire and Philip Merivale enacting its principal characters, failed to sustain its author's standard.

Toward the middle of March Katharine Cornell revived Bernard Shaw's satire, *The Doctor's Dilemma*, its first reappearance in New York in fourteen years. She, herself, was the Jennifer Dubedat of this occasion, which she made further memorable by assembling a cast that included Raymond Massey, Clarence Derwent, Colm Keith-Johnston, Whitford Kane, Cecil Humphreys, and Ralph Forbes as the several medical gentlemen concerned, and Bramwell Fletcher as Jennifer's erratic and argumentative artist husband. The revival scored up 112 performances. Meanwhile an only slightly less gratifying record was being achieved by a stage version of Richard Wright's novel, *Native Son*, adapted by Paul Green and Mr. Wright. Directed by Orson Welles, this proved to be a strikingly powerful dramatic exposition of the revolt of an uneducated Negro boy against what seemed to him arbitrary restrictions imposed by white men. For the title part of Bigger Thomas, Canada Lee was lured from other types of colored entertainment and unequivocally made good as an actor.

With April arrived what may quite probably go down in stage history as the most commendable American play of 1941, Lillian Hellman's *Watch on the Rhine*. Concerned with the current war, it presented a phase of the conflict in relation to its inherently possible impact upon the United States, and it provided the basis for superlatively fine acting on the part of Paul Lukas, Lucile Watson, Mady Christians, and George Coulouris, with John Lodge, Helen Trenholme, Eda Henemann, and three uncommonly intelligent children, Peter Fernandez, Eric Roberts, and Ann Blyth, assisting admirably. This, too, was still prospering mightily at the year's end, and had previously received the annual award of the Drama Critics' Circle as the best play of American authorship in the season of 1940-41. The only remaining noteworthy work to put in an appearance before the close of that season and the advent of warm weather was William Saroyan's formless, unclassifiable but nevertheless truly appealing fantasy, *The Beautiful People*. This highly characteristic opus kept Eugene Loring, Betsy Blair, Curtis Cooksey, E. J. Ballantine, and a few more out of other mischief for approximately two months.

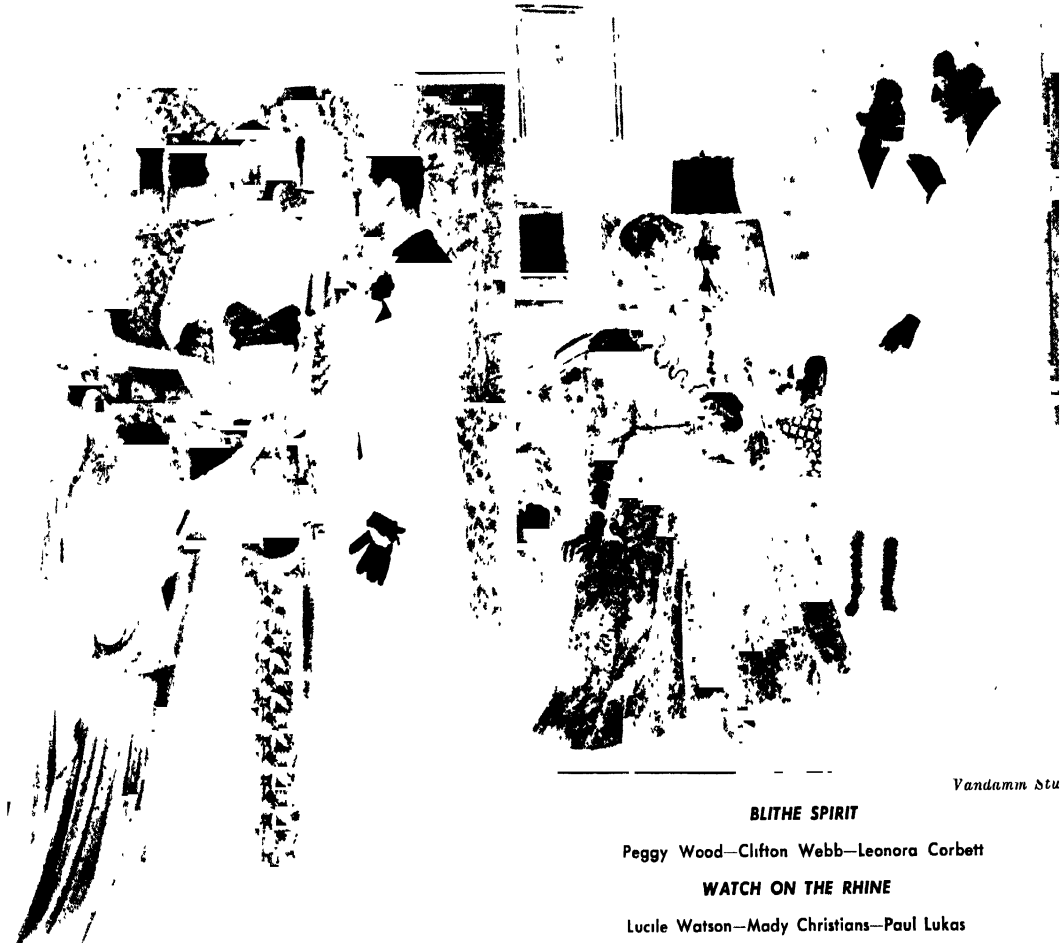
Hardly had the vacation season commenced when the summer theaters in every direction began announcing their opening programs, many of them depending, as usual, largely upon established hits of recent vintage, others upon visiting stars playing, apparently, roles upon which their hearts had long been set but for which regular commercial backing had never been found, still others upon tests of new works hopefully designed for New York and the forthcoming winter.

The autumn season opened promptly in early September with Carl Allensworth's *Village Green*, a pleasant, clean little play concerned with a tempest in a teapot in New Hampshire small-town politics. Frank Craven was the star, supported by



Yandamm Studio

MAURICE EVANS AND JUDITH ANDERSON IN MACBETH



Vandamm Stu

BLITHE SPIRIT

Peggy Wood—Clifton Webb—Leonora Corbett

WATCH ON THE RHINE

Lucile Watson—Mady Christians—Paul Lukas

LADY IN THE DARK

Gertrude Lawrence—Walter Coy—Paul McGrath

his son, John, Laura Pierpont, Perry Wilson, and Joseph Allen, but the piece proved too mild and unsophisticated to flourish long in the metropolitan atmosphere. Then came *The Wookey*, by Frederick Hazlitt Brennan, an amusing and frequently moving drama of war-time London, depicting the effect of the conflict upon a Cockney boatman, played delightfully by Edmund Gwenn. Others importantly involved were Heather Angel, Norah Howard, Carol Goodner, and Horace McNally, and the production lasted out the year. So also, rather surprisingly, did Parker W. Fennelly's *Cuckoos on the Hearth*, the only one of several trifling items imitating *Arsenic and Old Lace* by dealing humorously with crime and murder to develop any lasting qualities. And the success of this one was due in large part to a most engaging character portrayal by Percy Kilbride. Meanwhile the first of the fall musicals, *Best Foot Forward*, utilizing juvenile talent in a prep school setting, with Rosemary Lane as a special feature, was prospering mightily. But interspersed among these few creditable offerings was a considerably larger number of casualties surviving in numerous instances but a week or less, among them George S. Kaufman's initial venture as a producer rather than author, a comedy entitled *Mr. Big*; Gilbert Miller's elaborate and costly presentation of *Anne of England*, remade by Mary Cass Canfield and Ethel Borden from Norman Ginsbury's *Viceroy Sarah*, a London pre-war success, with Barbara Everest imported for the title role and Flora Robson figuring as the Duchess of Marlborough; and *All Men Are Alike*, the American rendering of Vernon Sylvain's farce, *Women Aren't Angels*, likewise from Britain. Even the Theater Guild's revival of Eugene O'Neill's *Ah, Wilderness!*, the first of a projected series, did not quite fill out its appointed time.

Late October brought an improvement in the situation along with several offerings of conspicuous merit and greater durability, subsisting beyond the close of the year. These included Maxwell Anderson's picture of Nazi domination in occupied France, *Candle in the Wind*, with Helen Hayes starred in the role of an American actress courageously devoting her energies and means to an attempt to effect the release, or escape, of her French lover from a concentration camp; *The Land Is Bright*, by George S. Kaufman and Edna Ferber, a three-generation saga of an American dynasty emanating from an unscrupulous "robber baron" and only regenerated in recent times by the call to patriotic service, staged with an imposing cast in which Ralph Theadore, Phyllis Povah, Martha Sleeper, Leon Ames, Flora Campbell, Hugh Marlowe, Louise Larabee, Muriel Hutchison, Diana Barrymore, and a young actress calling herself merely K. T. Stevens were especially prominent; and two musical comedies, *Let's Face It*, with Cole Porter songs, book by Herbert and Dorothy Fields, and with Danny Kaye for its bright, particular star, and the somewhat lower-grade *High Kickers*, featuring Sophie Tucker and George Jessel, the latter also listed as co-author and co-producer.

In early November arrived one of the most delectable lighter plays of the whole year, Noel Coward's *Blithe Spirit*, an appropriately airy ghost story in which the subject of spiritualism is handled comically and quite disrespectfully with the able cooperation of Clifton Webb as a young novelist, Leonora Corbett as the apparition of his first wife, Peggy Wood as his second wife in life and eventually also in the spirit, and Mildred Natwick as the extraordinarily funny medium responsible, to her own surprise as much as anybody's, for the return of both spouses. But another comedy, *The Walrus*

and *the Carpenter*, by A. N. Langley, received a chilly welcome despite the presence in its cast of the capable and popular Pauline Lord, and tarried but briefly. Still another, however, entitled *Spring Again*, by Isabel Leighton and Bertram Bloch, was warmly greeted for the deft and charming acting of Grace George and C. Aubrey Smith who, as co-stars, portrayed the chief characters, and was among those continuing into the new year. And at approximately the same time, and to equally gratifying acclaim, the Maurice Evans production of Shakespeare's *Macbeth* made its appearance and proved that, notwithstanding ill-fated presentations of *As You Like It* and *Twelfth Night* within a few weeks of each other, the Bard of Avon, adequately presented, is still a powerful drawing card. Mr. Evans himself was impressive in the name part, Judith Anderson was highly effective as Lady Macbeth, while Herbert Rudley, Staats Cotsworth, Harry Irvine, and Viola Keats took the other important parts with genuine credit.

As the season progressed greater stability was achieved and the preponderance of failures over successes was decreased, though the former remained distressingly numerous through November. Yet before that month ended it had witnessed the coming of Cornelia Otis Skinner for the first time, in New York, as a star at the head of her own company instead of as disease, monologist, or protean performer constituting the entire cast of her program. Miss Skinner's vehicle was an adaptation by Guy Bolton of Somerset Maugham's novel entitled *Theater*, the stage version bearing the same name. Though containing nothing of marked originality or startling character, it disclosed the actress as abundantly capable of blending her own work into that of an aggregation while still glowing with stellar preeminence. Among her associates were Arthur Margetson, John Moore, Viola Roache, Helen Flint, and Frederick Bradlee. And still another of the month's offerings was the play concocted by Jerome Chodorov and Joseph Fields from a series of stories by Sally Benson in *The New Yorker* about the Graves family, its juvenile members particularly, and their friends. *Junior Miss* was the title of the piece, which, largely by virtue of the captivating performances of Patricia Peardon, as Judy Graves, and Lenore Lonergan, as her boon companion, Fuffy Adams, jumped into immediate and sustained favor. After a final cluster of casualties November closed with the Theater Guild's production of Sophie Treadwell's *Hope for a Harvest*, a serious, interesting, purposeful but not quite convincing drama on the back-to-the-soil theme, which, despite admirable acting on the part of Frederic March, Florence Eldridge, Alan Reed, and several others, just missed seeing the old year out.

With December the percentage of quick failures dropped sharply, though obviously the lasting qualities of some of the month's arrivals still remained for time to determine as 1941 passed into history. There was, however, no doubt at all as to the success of several of them, including the first, *Sons o' Fun*, Olsen and Johnson's sequel to the seemingly perennial *Hellzapoppin*, which, nevertheless, finally took its departure just after its substitute was installed. The new entertainment turned out to be more of the same, with its two head men still hectically involved and with Carmen Miranda present to supply much of what they could not. A new Hammerstein-Romberg operetta, *Sunny River*, met a polite, but unenthusiastic, welcome as a highly creditable example of a type of musical offering that had gone out of style, and although it con-

tained a goodly supply of agreeable melodies, well sung by Bob Lawrence and Muriel Angelus, its future career seemed scarcely promising. But another unequivocal hit was scored by a gruesome, shivery thriller, replete with almost unendurable suspense—Patrick Hamilton's *Angel Street*, known in its preliminary stages by at least two previous titles. It contains but five characters, of whom one is a wife, another the husband striving to rid himself of her by mental torture, and a third the police inspector who appears just in the nick of time. These three were capably portrayed by Judith Evelyn, Vincent Price, and Leo G. Carroll, respectively. Presently along came another thriller, violently melodramatic, in *Brooklyn, U.S.A.*, an uncomfortably realistic picture of the operations of the underworld, its gangsters and murder ring, on the basis of actual disclosures in the course of the investigation recently made in what was once known, within the memory of many now living, as the "City of Churches." John Bright and Asa Bordages were the authors, Eddie Nugent the chief, and worst, of the gang. In striking contrast to this opus was Fritz Rotter and Allen Vincent's *Letters to Lucerne*, a tender and sometimes moving play concerned with the effect on several young girls of various nationalities, all pupils in a Swiss boarding school, of the war and the letters on its progress they receive from their respective homes. Katharine Alexander enacted the schoolmistress with great charm, Grete Mosheim, as the German member of the group, created an extremely favorable impression in her English-speaking debut, while five other young ladies of the cast were distinguished chiefly as being daughters of well-known fathers.

Christmas night brought Eddie Cantor back to the stage after several years devoted to Hollywood and the air. The medium for his return, made to order, was *Banjo Eyes*, a musical version of the popular farce of a few years back, *Three Men on a Horse*, rather highly seasoned with a not too palatable flavoring and equipped with tunes, lyrics, and an abundance of characteristic Cantor opportunity. Audrey Christie and Lionel Stander also came in for a share of the honors. The final offerings of the year were Clifford Odets' *Clash by Night*, a disappointingly unoriginal revamping of the old domestic triangle theme competently acted by Tallulah Bankhead, Joseph Schildkraut, and Lee J. Cobb, and *In Time to Come*, by Howard Koch and John Huston, a biographical drama of certain chapters in the life of President Woodrow Wilson, with a special, and doubtless deliberate and timely, relation to the effect upon him of the lost cause of his dream, the League of Nations. Richard Gaines, in the central role, captured admirably the Wilson spirit without attempting too much in the way of physical resemblance, while Russell Collins assumed the part of Colonel House, William Harrigan that of Tumulty, Bernard Randall of Judge Brandeis, and, among others, Nedda Harrigan that of Mrs. Wilson with comparable fidelity.

England. In Great Britain the fortunes of war that made play production and play-going in London a very uncertain proposition operated, on the other hand, to the considerable advantage of the smaller and less harassed communities to which a large portion of the population had migrated "for the duration." The result was an unusual number of touring organizations presenting condensed versions of the classics, as well as of established favorites of recent vintage, in such theaters or makeshift substitutes as the various towns afforded. Much of this activity was made possible through the good

offices of the Council for the Encouragement of Music and the Arts, an outgrowth of the Pilgrim Trust established by an American, the late Edward S. Harkness, of New York. Shakespearean offerings were prominent in the bills, as were also such pieces as Emlyn Williams' presentation of his own *The Light of Heart* and a revival by the reliable Marie Tempest of *The First Mrs. Fraser*.

But even in London the theaters doggedly pursued their course to such extent as the conditions of the moment might make feasible, closing down when the bombing raids became too strenuous, pertinaciously opening again when a respite permitted. Obviously the circumstances were not conducive to much new effort, at least until spring, when the introduction of the English equivalent of Daylight Saving Time—at first an advance of one hour, later of two—made possible two performances of almost any given play between 4 p.m. and nightfall, when air raids might be expected. By late April eight West End theaters were running, by mid-August eighteen, and by Christmas twenty-eight or more; and this despite the fact that many of the younger actors were in the Service while others were touring in distant regions. One specific result of war conditions was the profitable extension of the annual Spring Shakespeare Festival at Stratford from April until September, in the course of which at least eight of the plays were staged, commencing with *Much Ado About Nothing* and closing with *Romeo and Juliet*.

As conditions improved, London saw more and more new pieces, largely of a light, musical or revue character, though not entirely so. There was a rather inconsequential item called *Under One Roof*, by the young actor, Kim Peacock. There were also return engagements of *Shepherd's Pie*, a revue, and of Geoffrey Kerr's *Cottage to Let*, both after previous runs that had been rudely interrupted by Nazi raids. Other light and amusing entertainments that followed were the musical *Up and Doing*, with Leslie Henson and Binnie Hale, the elaborate *Black Vanities*, still another revue, *Rise Above It*, with Hermione Baddeley as head fun-maker, and a four-week visit of the D'Oyly Carte Opera Company to its old home, the Savoy Theater associated with the Gilbert & Sullivan tradition for half a century.

July saw the summer boom well under way and virtually recaptured the pre-war first-night atmosphere with the world premiere of Noel Coward's *Blithe Spirit*, with Cecil Parker, Kay Hammond, Fay Compton, and Margaret Rutherford in its four all-important roles. Esther McCracken scored an improvement upon her own earlier *Quiet Wedding* with a sequel, entitled *Quiet Week-end*. Stanley Lupino registered a substantial hit with *Lady Be-have*, the first regular musical comedy to put in an appearance since the war began, with himself as author, producer, and principal performer. Dame Sybil Thorndike enjoyed a short season in two dramas of as heavy a nature as Shakespeare's *King John* and the *Medea* of Euripides, and a new Open Air Theater was opened in Southwark Park with *The Taming of the Shrew*, wherein Claire Luce figured with real credit as the Katharine. With mid-summer came a new Firth Shepherd revue, *Fun and Games*, starring the same comedians who had created such jollity in *Shepherd's Pie*, and, as an added attraction, a new and very charming young dancer, Carol Raye, who made off with most of the honors.

The shortening days of fall necessitated a readjustment of the theater schedules but had slight effect on the general prosperity. Offerings were stag-

gered, some shown in the afternoon, some in the evening, but most of the musical items in both. Yvonne Arnaud was seen in Margery Sharp's adaptation of her own book, *The Nutmeg Tree*, which had had a brief career in New York in 1940 as *Lady in Waiting*. Dr. A. J. Cronin's *Jupiter Laughs* also reached the London stage via New York's and with about as unenthusiastic a greeting, though achieving a longer stay. A new Russian item, *Distant Point* by Alexander Afinogenov, was accorded a special interest by reason of the unhappy circumstance of its author being killed in an air raid on Moscow at about the time of his play's presentation. In a translation by Hubert Griffith, it disclosed a refreshing charm and simplicity marred, now and then, by too great insistence upon something resembling Russian propaganda. The closing weeks of the year contributed one more musical hit, *Get a Load of This*, containing a mild suggestion of America's *Hellzapoppin*, with Winston Churchill's son-in-law, Vic Oliver, as its featured performer; a pleasant little comedy by Kenneth Horne, of the R.A.F., called *Love in a Mist*, charmingly enacted by Richard Bird, Michael Shepley, Ann Todd, and Majorie Rhodes; the first London productions of *The Man Who Came to Dinner*, which had Robert Morley as a logical player for its title part, and of John van Druten's *Old Acquaintance*, welcomed as a superbly written trifle and with its two lady novelists delightfully portrayed by Edith Evans and Marian Spencer, Miss M. J. Farrell's *Ducks and Drakes*, disappointing, for a deficiency in humor, by comparison with the earlier *Spring Meeting*, of which she was a co-author, a new play about London and air raids, written with intense sincerity under extreme emotional stress by Emlyn Williams, entitled *The Morning Star*, wherein, as with *The Wookey*, a London Cockney rises to the emergency—a charwoman this time, personated by Gladys Henson, and, finally, a comedy-thriller, *Warn That Man*, cut to the measure of another Cockney character actor, Gordon Harker, by the Vernon Sylvaine hitherto identified with farces. The holiday season witnessed the familiar quota of fantasies, pantomimes, ballets, and revivals, including *Peter Pan*, in a new investiture, and that other perennial, *Little Women*.

Ireland. Dublin, meanwhile, was undergoing disappointment, because the renaissance of play-writing that had been expected to follow the enforced cessation of foreign tours on the part of her principal dramatic organizations, the Abbey and Gate Theater companies, and the growing impatience of the public with the familiar, oft-repeated standard works, had not materialized. Authors were active but deficient in originality and initiative. *Lord Edward*, by Lady Longford, proved to be merely a pedestrian reversion to Irish history, and *Hamilton and Jones*, the first work for the theater by the Leinster poetess, Winifred Letts, was found interesting but unimportant. New pieces by St. John Ervine and George Shields were patterned along stereotyped lines.

Australia. Wartime, while the conflict was confined to the Northern Hemisphere, was found opportune, also, for theatrical trouping in distant Australia, whither most of the native-born players were returning from London, resulting in a play-going boom in such centers as Melbourne and Sydney. A marked preference was manifested for straight drama, and repertory organizations presenting much the same recent works as had been seen in New York and London prospered accordingly. By October one such company from Sydney, that had been booked for a brief season in Mel-

bourne with *Susan and God* for its attraction, was celebrating its hundredth performance there. And at about the same time, a Gilbert & Sullivan Opera company, with several bona-fide D'Oyly Carte members in its cast, that had been dividing its time between Australia and New Zealand for a couple of years, was moved to continue its tour into the third year. Ten of the familiar items figured in its repertory, along with two not by Gilbert or Sullivan. During the season, the first new play by an Australian to be done professionally in Australia in five years made its appearance.

Mexico. Mexico, and specifically Mexico City, found its Pan-American Theater developed from modest beginnings to a point, in its fourth repertory season, where the Palace of Fine Arts was required to house its offerings, which are given sometimes in English, sometimes in Spanish. An interesting item of the year was *Lazy Monday*, by Margarita Uruea, who has been called the Mexican Clare Boothe. Another work, of at least semi-native origin, in the schedule was *Mañana Is Another Day*, first seen in 1940, the joint product of Theodore Apstein, a naturalized Mexican, and Dwight Morris, of New York. Several of the actors in the aggregation likewise hailed from the United States and London, and a number of the most popular repertory features were by British playwrights—*Ladies in Retirement*, *Outward Bound*, and *Hay Fever*.

France. As for France, her theater has been described as dead by one who knows. Henry Bernstein, dean of French dramatists but now a resident of the United States and a prospective American citizen, holds play-writing there under prevailing conditions to be impossible, though the "death" he records will doubtless prove subject to eventual resurrection. And a comparable situation may be assumed to exist in the other conquered and occupied countries, including Scandinavia.

Germany. But the German theater, meanwhile, experienced a boom, even though under circumstances politically controlled. Frequent new works were disclosed but proved to be of little account. The preference was strong for dramas and subjects of a vintage prior to 1933, especially classics and items of historical character, and the author most in favor was Gerhart Hauptmann. Operettas were, as always, popular—those of Strauss and Lehár in particular. Russian works were definitely under the ban. Even the plays of Bernard Shaw were omitted from the Salzburg Festival by reason of Mr. Shaw's outspoken criticism of the Nazi regime, although the anti-British sentiment did not extend to Shakespeare. And representations of Schiller's *William Tell* were forbidden on the strength of the heroic quality it assigns to a Swiss.

For published plays, see under LITERATURE and articles on foreign literatures. See PULITZER PRIZES; RADIO PROGRAMS.

RALPH W. CAREY.

THIRD INTERNATIONAL. See COMMUNISM.

THURINGIA. See GERMANY under *Area and Population*.

TIBET. A dependency of China in central Asia. Area, 463,000 square miles; population estimated at from 700,000 to 6,000,000. Capital, Lhasa, 50,000 inhabitants. Lamaism, a development of Mahayana Buddhism, is the religion of the people. Chief occupations: agriculture, stock raising, wool spinning, and knitting. The principal minerals are gold, borax, and salt. There is a factory for the manufacture of army equipment, uniforms, coins, and paper money. Trade is carried on with China and India.

Civil and religious authority is vested in the Dalai Lama, acting through a prime minister appointed from among the principal Tibetan lamas. The latter is assisted by a grand council of four members. The 14th Dalai Lama is a Chinese peasant boy selected in 1939 as the reincarnation of the 13th Dalai Lama who died in 1933. Enthroned Feb. 22, 1940 (see *YEAR BOOK* for 1940), he took the name of Jampel Ngawang Lobsang Yishey Tenzing Gyatso. During his minority, supreme power remains in the hands of the regent who assumed control upon the death of the 13th Dalai Lama.

TIMOR, Portuguese. A Portuguese possession in the Malay Archipelago, comprising the eastern part of the island of Timor together with the territory of Ambeno and islands of Pulo Caming and Pulo Jako. Total area, 7,330 square miles; population (1940 estimate), 474,363. Capital, Dili (Dilly or Dilli), with about 3,000 inhabitants. Chief export products: Copra, coffee, sandalwood, sandal-root, and wax. Estimated public revenues and expenditures balanced at 44,937,126 escudos for 1939 (escudo averaged \$0.0404 in 1939).

Portuguese Timor came into prominence late in 1941 as a result of the establishment of a Japanese air line—of strategic rather than commercial value—to Dili and the subsequent occupation of the territory by Australian and Netherland troops to forestall a threatened Japanese invasion. See *AUSTRALIA, NETHERLANDS INDIES, and PORTUGAL* under *History*.

TIN. High lights in the 1941 tin story were the Japanese victories in Malaya, especially the taking of Penang where the world's biggest tin smelting industry is located, and the menace to other sources of United States supply with the threat to Singapore, the Netherlands Indies, and especially to the sea routes over which tin must travel. The United States depends for tin entirely upon the outside world, and Malaya produces 75 per cent of the world's supply. Bolivia, the second largest source of world tin, puts out about 40,000 tons of metallic tin per year. The huge tin smelter under construction at Texas City, Texas, scheduled to handle Bolivian imports up to about 20,000 tons a year, will begin to operate April, 1942.

Two other very significant events in respect to tin were the establishment of a ceiling price of 52.03¢ a lb. for domestic sales by the OPM (q.v.) and the renewal of the British cartel to 1946.

Total imports of refined tin in 1941 were about 160,000 long tons, of which about 40,000 tons went into the government stockpile. Tin stocks at the end of 1941 were about 113,000 tons, including both government and privately owned commercial stocks, enough to last the country 13½ months at the 1941 rate of consumption of 100,000 tons for the year. World production rose to 209,500 tons by October, 1941, compared with 187,600 tons in October, 1940.

The government export restrictions of 1940 held throughout 1941. On Dec. 18, 1941, the OPM froze all tin in the United States and on the high seas en route to the United States, forbade sales or deliveries without permission of the Director of Priorities, and announced that all tin would thenceforth be subject to allocation and all future imports sold to the Metals Reserve Company. The OPM issued still another order, December, 1941, cutting the use of tin 50 per cent in unessential industries and denying it entirely, beginning March, 1942, to 29 uses, such as tin novelty articles, including mu-

sical instruments, toys, buckles, ornaments, refrigerator trays, vending machines, etc. This order covered tin, its alloys, and tin scrap and was designed to conserve about 15,000 tons of tin in 1942. Excepted was type metal for printing and publishing, and the tin container industry, which has been taking some 60 per cent of the total tin supply to make about 17,000,000 tin-lined cans per year. An A.E.F. would need so vast a proportion of tinned foods that no chance of saving within this field was seen. The National Academy of Sciences reported in April that 12,000 long tons could be reclaimed from used tin cans; and can-making representatives told the OPM that they could with safety reduce the weight of tin coating on cans by 10 per cent. The most drastic step in the conservation of tin was taken by the WFPB, Jan. 28, 1942, when it slashed into the manufacture and sale of tin cans for beer, candy, baking powder, coffee, cocoa, dog food, petroleum products, spices, and tobacco. In addition, the content of United States pennies was changed by government act, January, 1942, from 95 per cent copper, 4 per cent zinc, 1 per cent tin to 95 per cent copper, and 5 per cent zinc in order to save a yearly 45 tons of tin for war requirements.

Of tin ore bought by the government 24,453 tons had been delivered by the end of 1941; 290 tons were still en route; 253,802 tons were on order, raising 1942's potential imports to 278,545 tons; 90,000 tons were contracted for from Bolivia, 20,000 tons from the Netherlands Indies, and 2,500 tons from Mexico and South Africa. The Metals Reserve Company was receiving Bolivian ore at the rate of about 3,600 tons a month at the end of the year and tin concentrates from the Netherlands Indies at 4,000 tons a month.

Investigations of domestic tin deposits by the U.S. Bureau of Mines and Geological Survey brought the answer, March, 1941, that "no appreciable part of the tin required by American industry can be supplied from known domestic sources, regardless of how great the stringency or how high the price." See *BOLIVIA* under *History*; *GEOLOGICAL SURVEY*.

TIRES. See *BUSINESS REVIEW* under *Other Industries*; *MOTOR VEHICLES*; *RUBBER*.

TNT. See *BOMBS*; *CHEMISTRY, INDUSTRIAL*.

TOBACCO. The tobacco crop of 1941 in the United States was estimated by the U.S. Department of Agriculture at 1,279,872,000 lb., about 12 per cent smaller than the 1940 crop of 1,455,802,000 lb., and comparing with the 1930-39 average production of 1,394,839,000 lb. The harvested acreage totaled 1,350,500 acres compared with 1,407,000 in 1940, while the 1941 average acre yield was 948 lb., compared with the record of 1,034 lb. in 1940. The value of the 1941 crop (marketing season) was estimated (preliminary) at \$329,338,000 versus \$233,612,000 for 1940. The price per pound received by farmers averaged 24.2¢ on November 15 and 26.2¢ on Dec. 15, 1941, versus 15.0¢ in December, 1940. The production by types was estimated for flue-cured, 650,605,000 lb.; fire-cured, 75,783,000; air-cured, light: Burley, 351,232,000 and Southern Maryland, 29,822,000; air-cured, dark, 34,150,000; and cigar types, 138,280,000, including filler, 68,183,000; binder, 60,315,000; and wrapper, 9,782,000 lb. The decrease from 1940 was accounted for by reductions of about 4 per cent in acreage and about 8 per cent in acre yield. All classes except Maryland and cigar wrappers showed decreases from the 1940 acreage with dark-fired and dark-air-cured acreages showing sharpest per-

centage decreases. Higher yields, however, were made by the latter classes whereas all other classes except cigar filler showed lower yields in 1941 than in 1940. North Carolina continued to lead producing states with 465,235,000 lb., and was followed by Kentucky with 307,375,000; Tennessee 91,523,000; Virginia 91,122,000; South Carolina 66,000,000; Georgia 54,655,000; Pennsylvania 52,518,000; Wisconsin 29,960,000; Maryland 29,822,000; Ohio, 26,025,000; Connecticut 23,502,000; and Florida 11,929,000 lb.

Production of tobacco in other countries in 1941, as estimated by several agencies, was: Turkey 120,503,000 lb. (1940, 135,583,000); Bulgaria 99,207,000 lb. (1940, 110,230,000); Rumania 20,794,000 lb. (1940, 29,949,000); Canada 87,000,000 lb. (1940, 61,100,000); Mexico 33,000,000 lb. (1940, 50,707,000); Manchuria 38,000,000 lb. (1940, 33,000,000); China, flue-cured, 85,000,000 lb. (1940, 123,000,000); Japanese Empire (Japan, Chosen, and Taiwan) flue-cured, 122,000,000 lb. (1940, 120,000,000); India, flue-cured, 49,427,000 lb. (1940, 35,760,000); Java, flue-cured, 13,000,000 lb.; Sumatra, cigar wrapper, 15,900,000 lb. (1940, 24,500,000); and Algeria 50,000,000 lb. (1940, 27,000,000). Crops reported for 1940 were for Cuba 56,130,000 lb.; Chile 21,087,000 lb.; Greece 107,818,000 lb.; Germany, 96,231,000 lb.; Hungary 36,376,000 lb.; and Iran 28,000,000 lb.

Collections of internal revenue taxes on tobacco in the United States for the fiscal year 1941 amounted to \$698,076,891 (1940, \$608,518,444). The taxes on small cigarettes produced \$616,667,234 (1940, \$533,042,544), on large cigars \$13,400,528 (1940, \$12,897,764), on smoking and chewing tobacco \$54,927,764 (1940, \$54,383,803); and on snuff \$6,899,821 (1940, \$6,798,557). The per capita consumption of tobacco products in the United States in 1940 averaged 42 large cigars, 1,370 small cigarettes, smoking tobacco 1.53 lb., chewing tobacco 0.78 lb., and snuff 0.29 lb., totaling 7.45 lb. In 1940 exports of unmanufactured tobacco amounted to 235,741,732 lb., valued at \$44,044,749. See *Annual Report on Tobacco Statistics, 1941* (U.S. Dept. Agri.). See ENTOMOLOGY, ECONOMIC.

TOBAGO. See TRINIDAD AND TOBAGO.

TOGO, French. The part of Togo mandated to France by the League of Nations. Area, 21,893 square miles; population (1938), 780,497. Capital: Lomé (14,106 inhabitants). Chief products—cacao, palm oil, copra, coffee, and cotton. Trade (1939): 91,644,000 francs for imports and 74,227,000 francs for exports (franc averaged \$0.0251 for 1939). Budget (1939): 50,534,000 francs; in addition, there was a railway budget of 12,889,000 francs. Railways extended for a total of 242 miles. Shipping (1938): 386 ships cleared the ports of Lomé and Anecho. The authorities of French Togo remained loyal to the Vichy Government in France in the controversy with Gen. Charles de Gaulle's rival "Free French" council in London.

TOGOLAND. The area of Togo which was confirmed as a British mandate by the League of Nations and attached to the British Gold Coast for administrative purposes. Area, 13,041 square miles; population (June 30, 1940), 391,473. Chief products—palm oil, cacao, kola nuts, coffee, and cotton. Statistics of trade and finance are included in the general totals for the Gold Coast. Administrator, the Governor of the Gold Coast.

TOKELAU (UNION ISLANDS). See NEW ZEALAND.

TONGA (FRIENDLY ISLANDS). See BRITISH EMPIRE.

TONKIN (TONGKING). See FRENCH INDO-CHINA.

TOOTH DECAY AND TREATMENT. See DENTISTRY.

TOPOGRAPHY. See under MAPPING.

TRACK AND FIELD ATHLETICS. Minus the incentive of international competition, track and field athletics held up well in 1941, with two runners, New York's Leslie MacMitchell and Notre Dame's Gregory Rice, dominating the headlines and the record books. Rice won eighteen races, indoors and out, from two miles to three and in kindred metric distances. MacMitchell didn't win all his races, nor set a batch of records, the way Rice did, but the boy from New York's sidewalks was peerless in the classic mile, regarded as top event on any track program.

Rice ran two miles faster than any man ever before when, late in the indoor season in Chicago, he crossed the finish line in 8 minutes 51.1 seconds, shattering his own indoor record as well as Taisto Maki's outdoor figures of 8:53.2 On two occasions Rice blasted his own 8:56.2, hung up in 1940, and he cracked his own three-mile indoor mark with a crackling 13 minutes 51 seconds. He also retained his American indoor and outdoor three mile and 5,000 meter titles, and no less than eleven times hit 9:04 or better in the two-mile romp

Already established as the best intercollegiate miler, MacMitchell took over the field in 1941, and after being beaten in his first indoor start, blasted through to win the Baxter and the Hunter and to run the fastest mile of the year—4:07.4, a feat equalling Glenn Cunningham's competitive record. MacMitchell then set the indoor intercollegiate mark of 4:12, and was undefeated outdoors as he whipped through to the Intercollegiate A.A.A.A., National Collegiate A.A., and National A.A.U. medals. He also won the I.C.A.A.A. half mile in 1:53 and ran a 49-second quarter on the mile relay to lead his New York University team to its first outdoor team title. Four amazing races by MacMitchell on the two days of the Penn Relays gave the N.Y.U. squad three relay titles at Philadelphia. MacMitchell's closest competitor in the mile was Wisconsin's Walter Mehl, who beat Leslie four times and lost five decisions to him.

Altogether there were eight world's indoor records set by Americans in 1941 and seven outdoor marks, and two tied. Rice set the new two-mile mark and then ran the three miles in 13.51, bettering his own standard. Johnny Borican flashed 600 yards in 1:10.2, slightly shadowing Jimmy Herbert's year-old mark. N.Y.U. ran the medley relay in 7.25.3, bettering Texas State's two-year-old record. Allan Tolmich also beat his own universal standard in the 70-yard hurdles by skidding over the timber in 0:08.3. And Joe McCluskey, veteran Fordham alumnus, raced the 2-mile steeplechase in 9:35.4, blasting his own record set up nine years before. In the field events, Earle Meadows set a pole vault mark of 14 feet 7½ inches, and Al Blozis of Georgetown tossed the shotput 56 feet 4½ inches to beat his own mark.

In the outdoor competition, which did not receive much spectator attention, Grover Klemmer, a speedy Californian, went 400 meters in 0:46, beating Archie Williams's five-year-old record and he equalled Ben Eastman's nine-year-old mark of 0:46.4 in the 440-yard dash. The University of California lowered world figures for the mile relay to 3:09.4 and the two-mile relay numerals to 7:34.5, bettering in each case records hung up a year ago by Stanford University. Cornelius Warmerdam, California school teacher, soared over the

pole vault bar at 15 feet 5¼ inches to smash his own record by more than four inches, and Lester Steers, still another Californian, high jumped the incredible height of 6 feet 11 inches. Archie Harris of Indiana broke the American discus record of 173 feet four times and eclipsed Willi Schroeder's 1936 world mark with a prodigious heave of 174 feet 8¾ inches.

Harold Davis, another Californian, tied Jesse Owens' world figures from 100 meters of 10.2, but lost his national 100-meter crown to Barney Ewell, Penn State Negro, who swept all the sprint titles in the I.C.A.A.A. and N.C.A.A., narrowly beat Davis in one national sprint and was beaten by Davis by an inch in the 200 meters in a near record 20.4.

In team competition, the Olympic Club of San Francisco, won the outdoor national title and the New York A.A. the indoor. Southern California again won the N.C.A.A. honors, with N.Y.U. taking the I.C.A.A.A. outdoor title and Fordham University taking the indoor title for the first time. Indiana University was top in the Big Ten meets.

CASWELL ADAMS.

TRADE. See BUSINESS REVIEW; MARKETING, TRADE, FOREIGN; the sections on *Foreign Trade* under the various countries and on *Trade* under the States.

TRADE, FOREIGN. Publication of figures on the foreign commerce of the United States was suspended upon America's formal entrance into the World War. Consequently trade statistics for the calendar year of 1941 are not publicly available. However the Department of Commerce, in the *Foreign Commerce Weekly* of Nov. 22, 1941, presented a full summary of U.S. trade during the first two years of the war. The tables that follow were abstracted therefrom.

Table I has particular interest because it covers the ups and downs, violent in many cases, of the yearly totals of the U.S. exports and imports of each of the more important commodities during each of the two years that followed the outbreak of war on Sept. 1, 1939. The corresponding totals for the year ended with Aug. 31, 1939, which are included, present the last prewar year as a means for comparison of the later totals. Thus come to view such changes as the long decline in the U.S. exports of tobacco, the sharp drop in those of raw cotton during 1941, the rise in 1941 of the exportation of aircraft to almost exactly double the total by value for 1940, and the still sharper, though less substantial, jump in the shipment of firearms and ammunition. In the imports may be traced the beginning of American purchase of ores of tin with a view to extracting the metal from such ores for the first time on a large scale in this country; the rapid passage of the United States from the position of an exporter, on balance, of copper to that of a heavy importer of this metal; and the extent of the stabilization of the Latin-American coffee trade.

Table II illustrates more fully the cases of a few particularly significant commodities, by showing, in percentage, each one's part of each year's total of exports or imports and furthermore each one's excess or decline, for 1941, over its total for 1940 and 1939.

The relocation of U.S. foreign trade, in its general lines, appears in table III, presenting the shifts to and from pertinent general groupings of commodities and likewise of countries. Table IV (p. 660) shows the totals (years ended Aug. 31, 1940 and 1941) of U.S. trade with each of the more important commercial nations; here may be observed

the extent of the interruption of trade with Italy, Germany, Japan, and the many lands under their control, and likewise the course of business with the still-free countries of Europe—Sweden and Switzerland. As to Russia, the rise of U.S. exports subsequent to the start of that country's war with Germany came too late to appear conspicuous in the totals for the year ended Aug. 31, 1941.

It deserves note that the yearly trade of the U.S. with the British Empire and Egypt, as an aggregate, more than doubled as to exports, if the year ended Aug. 31, 1941, be compared with the average for the corresponding years 1937-39; as to imports, it rose by 45 per cent. A comparison of figures will show that, while exports to this group of countries ran not quite to \$1.48 for every \$1 of corresponding imports (1937-39) they exceeded \$2 for every \$1 of such imports for 1941.

I—LEADING U.S. EXPORTS AND IMPORTS
(Years ended August 31)

Commodities	Millions of dollars		% of 1941
	1939	1940	
EXPORTS			
Exports (U S mdse), total	2,905 7	3,924 7	100 0
Animals & prod., edible	74 5	78 9	3 2
Vegetable foods, beverages	247 0	212 3	8 5
Grains & preparations	108 8	84 0	3 5
Fruits & preparations	92 0	58 3	2 7
Vegetable prod., inedible	216 5	170 7	5 8
Rubber & manufactures	32 4	43 2	1 3
Unmanufactured tobacco	137 5	59 7	2 1
Textile fibers, mfrs	275 9	479 6	16 4
Raw cotton	171 4	384 6	13 1
Cotton mfrs, yarn	60 5	80 3	2 8
Wood, wood pulp, paper	95 1	147 6	5 1
Nonmetallic minerals	473 4	526 5	18 5
Coal	51 4	89 6	3 1
Petroleum & products	371 6	364 7	12 5
Metals & manufactures	381 6	739 0	26 1
Mills' iron & steel prod	190 8	426 7	14 6
Iron, steel advanced mfrs	44 3	61 9	2 2
Nonferrous metals	141 8	236 8	8 2
Aluminum, except mfrs	13 4	27 5	1 0
Copper, refined	75 0	103 5	3 7
Brass & bronze	6 6	24 7	0 9
Machinery & vehicles	857 3	1,151 8	38 7
Machinery	483 7	599 9	20 5
Automobiles & parts	263 8	240 8	8 2
Aircraft, engines, parts	89 6	246 2	8 4
Chemicals & related prod	137 2	223 1	7 8
Industrial chemicals	56 1	96 9	3 3
Explosives, fuses, etc.	3 9	17 9	0 6
Firearms & ammunition	5 2	43 8	1 5
IMPORTS			
Imports for consumption	2,110 7	2,529 7	100 0
Animals & products, edible	93 9	81 4	2 5
Meat products	30 0	19 7	0 6
Fish	30 3	32 0	1 1
Animals & prod., inedible	138 1	167 1	6 1
Hides & skins	43 8	50 8	2 3
Furs & manufactures	49 4	71 7	3 1
Vegetable foods, beverages	482 7	525 4	19 2
Fruits & nuts	56 5	59 4	2 1
Cocoa or cacao beans	24 3	29 9	1 1
Coffee	137 5	137 9	5 2
Tea	20 1	22 6	0 9
Cane sugar—Philippines	49 5	41 9	1 5
Do.—foreign countries	61 6	88 7	3 2
Distilled spirits & wines	56 4	60 0	2 2
Vegetable prod., inedible	318 2	459 6	16 5
Crude rubber	151 7	265 2	9 8
Oilseeds	35 6	35 0	1 3
Expressed oils & fats	38 9	54 0	2 0
Tobacco, unmanufactured	36 0	36 9	1 3
Textile fibers & mfrs	316 1	407 0	15 6
Cotton mfrs, yarn	38 1	34 8	1 3
Jute burlaps	27 5	40 4	1 6
Wool & mohair, unmf'ed	41 0	72 9	2 8
Wool manufactures, yarn	23 3	25 1	0 9
Raw silk	95 4	133 2	4 8
Wood, pulp & paper	244 0	277 6	10 2
Nonmetallic minerals	129 3	154 4	5 6
Petroleum & products	41 9	59 1	2 2
Diamonds	41 0	47 4	1 8
Metals & manufactures	191 1	295 8	11 2
Ferro-alloys	17 4	35 5	1 3
Copper, incl ores, mfrs	39 6	61 6	2 3
Nickel	21 4	38 7	1 4
Tin ore	0 1	2 2	0 1
Tin bars, blocks, etc	56 6	104 9	3 8
Chemicals, related prod.	83 8	69 6	2 6

II—LEADING U.S. EXPORTS AND IMPORTS
 (Years ended Aug. 31, 1939, 1940, and 1941)

Commodity	Millions of dollars			Per cent of total			Per cent change	
	1939	1940	1941	1939	1940	1941	1941 over 1939	1941 over 1940
EXPORTS OF U.S. MERCHANDISE								
Machinery, total.	484	600	695	16.6	15.3	17.0	+44	+16
Iron and steel-mill products	191	427	501	6.6	10.9	12.3	+163	+17
Aircraft, including engines and parts	90	246	492	3.1	6.3	12.0	+449	+100
Petroleum and products	372	365	224	12.8	9.3	5.5	-40	-39
Automobiles, parts, and accessories	264	241	292	9.1	6.1	7.1	+11	+21
Chemicals and related products*	133	205	212	4.6	5.2	5.2	+59	+3
Firearms, ammunition, and explosives	9	62	173	3	1.6	4.2	+1,822	+179
IMPORTS FOR CONSUMPTION								
Crude rubber.	152	265	401	7.2	10.5	13.7	+164	+51
Nonferrous ore and metals, other than tin.	86	127	217	4.1	5.0	7.4	+153	+71
Tin.	57	107	176	2.7	4.2	6.0	+211	+64
Newsprint and wood pulp	181	204	183	8.6	8.1	6.3	+1	-10
Unmanufactured wool	41	73	181	1.9	2.9	6.2	+340	+148
Coffee.	138	138	152	6.5	5.5	5.2	+11	+10
Cane sugar	111	131	136	5.3	5.2	4.7	+22	+4
Raw silk	95	133	110	4.5	5.3	3.8	+15	-17

* Excluding explosives

 III—WARTIME CHANGES IN U.S. TRADE
 (Years ended August 31)

Area and class	Millions of dollars			Per cent of total			Per cent change	
	1937-39 average	1940	1941	1937-39 average	1940	1941	1941 over 1937-39 average	1941 over 1940
EXPORTS								
Exports (including reexports), total	3,094	4,013	4,190	100.0	100.0	100.0	+35	+4
British Empire countries and Egypt	1,297	1,800	2,761	41.9	44.9	65.9	+113	+53
American republics	515	734	783	16.6	18.3	18.7	+52	+7
All other areas	1,282	1,479	647	41.4	36.9	15.4	-50	-56
Exports of United States merchandise, total	3,052	3,925	4,092	100.0	100.0	100.0	+34	+4
Foodstuffs	330	292	273	10.8	7.4	6.7	-17	-7
Crude materials	633	626	283	20.7	16.0	6.9	-55	-55
Semimanufactures	558	872	776	18.3	22.2	19.0	+39	-11
Finished manufactures	1,531	2,134	2,760	50.2	54.4	67.4	+80	+29
Agricultural.	770	720	407	25.2	18.3	9.9	-47	-43
Nonagricultural	2,283	3,205	3,685	74.8	81.7	90.1	+61	+15
IMPORTS								
General imports, total.	2,451	2,626	3,033	100.0	100.0	100.0	+24	+15
British Empire countries and Egypt	878	1,064	1,364	35.8	40.5	45.0	+55	+28
American Republics	537	616	837	21.9	23.5	27.6	+56	+36
All other areas.	1,036	946	832	42.3	36.0	27.4	-20	-12
Imports for consumption, total	2,418	2,530	2,915	100.0	100.0	100.0	+21	+15
Foodstuffs.	690	607	631	28.5	24.0	21.6	-9	+4
Crude materials	754	938	1,246	31.2	37.1	42.7	+65	+33
Semimanufactures.	496	557	641	20.5	22.0	22.0	+29	+15
Finished manufactures	478	427	397	19.8	16.9	13.6	-17	-7
Agricultural.	1,223	1,279	1,530	50.6	50.6	52.5	+25	+20
Nonagricultural.	1,196	1,251	1,385	49.5	49.4	47.5	+16	+11

The same totals showed that the exports to the group advanced from 41.9 per cent of all U.S. exports (1937-39) to 65.9 per cent (1941), while corresponding imports advanced only from 35.8 per cent (1937-39) to 45 per cent (1941) of all U.S. yearly imports. The American republics as a whole more nearly balanced their trade with the United States in the respects considered above; notably, they sent more in 1941 than they took.

See AGRICULTURE; BUSINESS REVIEW; CUSTOMS, BUREAU OF; ECONOMIC WARFARE, BOARD OF; EXPORT-IMPORT BANK; MARKETING; TARIFF COMMISSION, U.S.; the countries under *Foreign Trade*; articles on products.

TRADE AGREEMENTS. See TARIFF COMMISSION, U.S.; ARGENTINA, CANADA, CUBA, ICELAND, MEXICO, TURKEY, UNION OF SOVIET SOCIALIST REPUBLICS, and URUGUAY, under *History*.

TRAFFIC PROBLEMS. See DEFENSE TRANSPORTATION, OFFICE OF. Compare ACCIDENTS.

TRANS-JORDAN. An Arab territory in Asia Minor, bounded by Syria, Iraq, Saudi Arabia, and Palestine. With Palestine, it was mandated to Great Britain by the League of Nations, Sept. 29, 1923. Area,

34,740 square miles; estimated population, about 300,000 (260,000 Arab Moslems, 30,000 Arab Christians, 10,000 Circassians and others). Chief towns: Amman (capital), Es-Salt. Arabic is the official language. Schools in 1938-39 numbered 191 with 13,854 pupils.

Defense. The defense force in 1941 included Royal Air Force units based at Amman and Maän; the Trans-Jordan Frontier Force of 700 natives with British officers; and an Arab Legion of 47 officers and 1,577 men, led by Col. John B. Glubb, an Englishman. Local Arab tribal levies were available in time of emergency.

Production, etc. East of the Hejaz Railway the country is largely desert, but fertile land suitable for agriculture lies to the west. Stock raising and primitive agriculture are the principal occupations. Some tobacco is grown. Phosphate deposits have been developed and potash is recovered from the Dead Sea. The country's limited trade is mainly with Palestine and Iraq. There is a surfaced automobile highway from Jerusalem to Amman. Dirt roads raised the total mileage suitable to motor traffic in 1938 to 1,250. In 1941 a surfaced highway was completed from Baghdad to Haifa, Palestine; it crosses Trans-Jordan alongside the Iraq Pe-

IV—U.S. FOREIGN TRADE, BY COUNTRIES
 (Years ended August 31)

Country	(Millions of dollars)			
	Exports ^a		Imports	
	1940	1941	1940	1941
Grand totals	4,013.4	4,189.5	2,626.1	3,032.9
United Kingdom	789.6	1,297.3	166.5	133.1
Canada	653.7	853.5	401.6	503.5
British India, including				
Burma	69.1	102.4	95.2	107.5
British Malaya	14.6	34.5	233.2	333.1
Australia	76.3	71.5	18.8	106.5
New Zealand	16.2	22.1	8.5	12.6
Union of South Africa	84.4	158.2	44.2	50.6
British West Africa	5.1	17.4	21.1	26.4
Belgium	46.4	b	47.0	11.3
Denmark	18.2	b	2.3	.2
Finland	23.5	13.3	10.9	2.5
France	326.6	2.4	50.9	7.7
Germany, Czecho-				
slovakia, Poland	7	b	14.6	4.6
Italy	76.8	0.1	39.7	.5
Netherlands	76.4	b	19.3	.7
Norway	32.7	b	16.5	5.2
Portugal	17.9	15.6	9.0	16.5
Spain	40.0	14.0	13.5	14.8
Sweden	80.1	16.4	34.3	3.3
Switzerland	30.9	9.8	29.1	31.7
Union of Soviet Socialist				
Republics	88.1	65.1	23.8	22.4
Mediterranean Area ^c	65.9	144.9	72.9	36.1
Egypt	17.6	115.4	7.8	7.9
Cuba	90.7	100.2	116.2	144.2
Mexico	91.8	130.4	75.3	83.4
Argentina	117.2	78.0	79.2	136.6
Brazil	111.4	117.9	108.5	144.5
Chile	41.8	45.4	62.2	87.8
Colombia	54.5	55.3	51.4	45.5
Venezuela	72.0	57.7	32.8	50.1
Other American Republics	154.5	197.8	90.7	145.1
Ceylon	2.0	1.5	25.5	35.5
China	82.1	76.1	91.2	87.3
Hong Kong	16.2	26.5	3.7	2.2
Japan	243.8	137.8	171.1	138.5
Netherlands Indies	45.0	89.6	138.9	216.3
Philippine Islands	108.1	99.1	88.7	91.2
Belgian Congo	3.0	9.1	10.4	37.6
Newfoundland and				
Labrador	9.9	13.5	10.9	15.3
European Colonies in				
Latin American Area	56.4	48.9	33.5	50.1

^a Includes reexports. ^b Less than \$50,000. ^c Includes Azores, Bulgaria, Gibraltar, Greece, Hungary, Malta, Rumania, Albania, Yugoslavia, Palestine, Syria, Turkey, Egypt, Algeria, Tunisia, and Morocco.

troleum Company's pipeline. The Hejaz Railway, crossing the country from north to south, was open to traffic only as far south as Maán. Air lines from Cairo, Egypt, and Lydda, Palestine, to Baghdad cross Trans-Jordan. Government revenue (1939-40), 513,971 Palestine pounds, including a grant-in-aid from the British Government; expenditure, £P510,293; public debt (Dec. 31, 1939), £P155,107.

Government. Conquered by the Ottoman Empire by the British in the World War, Trans-Jordan was placed under the rule of the Hashimite prince, Emir Abdullah ibn Hussein in April, 1921. He is assisted by a Council of Ministers, established Aug. 6, 1939. A Legislative Assembly of 16 elected and 6 ex officio members was established in 1929. A treaty recognizing Trans-Jordan's right to an independent government but placing it under British protection was signed Feb. 20, 1928. The British High Commissioner for Palestine is also High Commissioner for Trans-Jordan. He is represented at Amman by a British Resident (A. S. Kirkbride, appointed Feb. 16, 1939).

History. The Emir Abdullah again displayed his loyalty to the British in 1941 during the armed struggles that drove Axis influence out of both Iraq and Syria. Following Rashid Ali Al-Gailani's coup in Iraq (q.v.), the deposed Regent, Abdul Ilah, took refuge with his uncle, Emir Abdullah, in Amman. The Trans-Jordan Arab Legion fought with

the British in the subsequent drive to oust Rashid Ali. Abdullah also organized a tribal force to aid in the campaign. Iraqi sources on May 19 claimed that their irregular forces had invaded Trans-Jordan under the anti-British Arab leader, Fawzi el Kaoujji. Apparently guerrilla fighting took place along the road and oil pipe line in northern Trans-Jordan in connection with the British capture of Rutbah Wells in western Iraq. On June 4 the Arab Legion was reviewed by Emir Abdullah in Amman upon its return from the successful operations in Iraq.

Two days later French planes from Syria were reported to have bombed Amman. Trans-Jordan served as base for some of the Allied columns that on June 8 launched the invasion of Syria and Lebanon (q.v.). In recognition of his cooperation, the British early in the year appointed the Emir an air commodore in the Royal Air Force.

See ARABIA under *History*; WORLD WAR.

TRANSPORTATION. See AERONAUTICS; DEFENSE TRANSPORTATION, OFFICE OF; EXPORT-IMPORT BANK; MOTOR VEHICLES; PETROLEUM COORDINATOR FOR NATIONAL DEFENSE; PORTS AND HARBORS; RAILWAYS; RAPID TRANSIT; ROADS AND STREETS, SHIPPING, TRANSPORTATION DIVISION; WATERWAYS, INLAND; also sections on *Transportation* under countries and States.

TRANSPORTATION DIVISION. On May 28, 1940, President Roosevelt appointed the seven-member Advisory Commission to the Council of National Defense, and named Ralph Budd as Commissioner of Transportation. [Since that time the activities of the Advisory Commission have been transferred to other agencies, the Transportation Division being superseded by the Office of Defense Transportation (q.v.) under the Office for Emergency Management on Jan. 2, 1942.] Mr. Budd's central task was to have available an adequate supply of transportation. Such matters as rates and charges, labor relations, and the routing of traffic were left to existing agencies designated by statute to handle them.

The Transportation Commissioner did not set up a large force but, in the interests of efficiency and economy, called upon many existing organizations, both public and private. The Association of American Railroads, among other things, furnished statistics of carloadings, car and locomotive supply, fuel and store stocks. Managers of Port Traffic reported the freight car situation at each port, and the Car Service Division made a weekly check of all industries. This latter division had authority to embargo any civilian industry not promptly releasing railroad equipment. The Bureau of Service of the Interstate Commerce Commission assisted in locating misuse of equipment and shipper complaints. The Commissioner also had at his disposal a Tank Car Service Committee and a consultant for the Short Line railroads. The Great Lakes carriers, the barge lines, the pipe lines, and the air lines were also represented on the staff of the Transportation Commissioner. In regard to highway operations, the Transportation Commissioner was advised by a Central Motor Transportation Committee which had 16 district committees on which for-hire truckers, bus operators, and the public were represented. The Work Projects Administration, the Public Roads Administration, and the various State Motor Vehicle authorities made available their services. To facilitate contact with government agencies, there were designated liaison officers.

From the beginning, the Transportation Division engaged in a constant study of railroad traffic demand, present and prospective. In July, 1940, the

Commissioner recommended that the railroad ownership of freight cars be increased to 1,700,000. This program was adopted, but because of material shortages, it was 24,370 cars short on Oct. 1, 1941. A further program was adopted early in 1941 calling for a total of 1,800,000 cars by Oct. 1, 1942. This called for the building of about 154,000 new cars during the twelve months October to October. At the end of the year the program was falling behind by about one half or 7,000 cars a month, because of shortage of material. Difficulty in obtaining materials also prevailed as to locomotive building, and in a lesser degree to maintenance and improvement of roadways and structures.

The Transportation Commissioner urged upon shippers and carriers that full use be made of existing units and that cars and locomotives be kept in serviceable condition. On Oct. 1, 1939, the bad order per cent of all freight cars was 12.1. A year later it was 8.1 per cent and on Oct. 1, 1941, 4.1 per cent, an all-time low record. Since shippers have control of loaded freight cars approximately half of the time, they were appealed to to load and unload cars promptly, and to load them to capacity. Largely as a result of shipper cooperation, the average movement per car per day rose from 35.3 miles in August, 1940, to the new record high of 44.1 miles just one year later.

In May, 1941, users of coal were called upon to build up their stocks. On Sept. 1, 1941, railroad fuel supply amounted to 8,017,000 tons, an increase of 2,363,000 tons over the corresponding period in 1940. The Commissioner arranged for the formation of a Tank Car Service Committee to find out currently to what extent petroleum and its products could be handled by existing railroad equipment.

In view of a threatened shortage of passenger equipment resulting from growing troop movements, the railroads were urged to increase their standby of passenger cars by discontinuing trains which can be abandoned. The Transportation Commissioner addressed a letter to the Public Utilities commissions of each state outlining the necessity for this program; all interested parties responded to this suggestion.

The Transportation Commissioner was instrumental in planning a survey of all trucks and buses available in the country, the actual work to be done by the Public Roads Administration, the WPA, and the various State Motor Vehicle departments. There were critical shortages in materials for building and repairing buses and street cars, and the Transportation Division backed the effort to increase these particular forms of transport. In the meantime, municipal authorities and business concerns were urged to enforce traffic rules and stagger the opening and closing hours of mills and offices. Working with the assistance of the Public Roads Administration and the WPA, the Transportation Division also attempted to relieve congested highway conditions existing at industrial plants working on defense materials. Many surveys were made indicating the necessity for improved highways at plants all over the country.

To insure the maximum movement of iron ore through the Great Lakes, the Transportation Division arranged for a large ice-breaker to assist in opening the season early and in keeping it open late. To the same end, new and larger ore steaming facilities were recommended and installed at Allouez, Wis. Legislation was sponsored which permitted the use of Canadian lake boats between United States ports, and arrangements were made for a higher load line thus allowing heavier cargoes.

The result was a seasonal movement during 1941 of 80,116,360 tons compared with the former high record of 65,204,600 tons set in 1929.

Through the consultant on inland water transportation, a complete survey was made showing the equipment available on the Mississippi-Ohio-Missouri River System, Intracoastal Canal, and Warrior River System. Barges and boats on rivers and canals handled more freight in 1941 than in any previous year.

There was substantial pipe line construction for petroleum and its products and for natural gas.

The consultant on warehousing maintained contact with all government agencies involved in the storage of materials, and upon request has assisted in the location of suitable facilities. The Transportation Division arranged for a complete census of all warehouses to show which can be used for storage purposes.

The Transportation Division cooperated with the Priorities Division in connection with transportation equipment of all kinds. Although blanket priorities were granted for material needed in new cars and locomotives and new buses and trucks, sufficient material was not made available in 1941 except for highway trucks which with automobiles are more numerous than ever before. All applications for Certificates of Necessity under Section 124 of the Internal Revenue Code which involve transportation agencies were referred to the Transportation Division for study and recommendation. The Division also participated in the work of the Off-Shore Shipping Priorities Committee of the Office of Production Management.

Frequent meetings were held with representatives of the Army Intelligence Staff, Naval Intelligence, and the Federal Bureau of Investigation looking toward protection of strategic rail and port facilities against possible sabotage.

RALPH BUDD.

TRANSVAAL. See SOUTH AFRICA, UNION OF.

TRAVEL. According to the *American Express Survey and Forecast of Travel* (January, 1942) the travel and recreation year of 1941 set new high records in this our third largest industry—an industry with a value variously estimated as ranging from five and a half to six billion dollars. Douglas Malcolm, in the report, pointed out that the travel, recreation, and resort industry now stands near the top as a source of income for a good many of our States. Catering to tourists is recognized as the leading business in New Hampshire, New Mexico, and Colorado. Maine reckons her tourist trade as second only to agriculture; California puts only the petroleum industry ahead of it, while to Florida it represents many times the value of the citrus fruit crop. Tourists are worth more to North Carolina than the cotton crop, and more to Louisiana than rice, sugar, and cotton combined.

Seven per cent of the national income is spent annually on travel and recreation. That a continuous and uninterrupted flow of travel is considered vital to national welfare is attested by the fact that 39 States appropriated nearly \$6,000,000 last year for State advertising to attract tourists. Florida topped the list with an appropriation of \$825,000. According to a recent statement by Gov. Ralph L. Carr, Colorado plans to double its State advertising campaign appropriation for 1942. Canada, Mexico, Cuba, and other nearby neighbors of the Western Hemisphere count heavily on our tourist dollars with which to balance budgets and pay interest on obligations to the United States.

While travel within the hemisphere increased, restrictions on travel to belligerent areas kept the total number of persons traveling abroad at a low level as compared with pre-war years. The number of passports issued or renewed by the Department of State for 1941—49,757—was less than half of the total for any year between 1920 and 1938, although it showed a considerable increase over the 1940 figure of 26,253.

See IMMIGRATION, EMIGRATION, AND NATURALIZATION; MOTOR VEHICLES; NATIONAL PARK SERVICE; PASSPORTS; REFUGEES; SHIPPING. For number of persons entering the United States see CUSTOMS, BUREAU OF. For books on travel, see LITERATURE, ENGLISH AND AMERICAN.

TREASURY, U.S. Department of the. See PUBLIC FINANCE and articles on the following departments: COAST GUARD, U.S.; CUSTOMS, BUREAU OF; NARCOTICS, BUREAU OF, SECRET SERVICE DIVISION. The Secretary of the Treasury in 1941 was Henry Morgenthau, Jr.; Comptroller of the Currency, Preston Delano; Treasurer of the United States, William A. Julian. See BANKS AND BANKING; FINANCIAL REVIEW; PUBLIC FINANCE.

TRENGGANU. See BRITISH MALAYA.

TRAIL SMELTER CASE. See CANADA under *History*.

TRINIDAD AND TOBAGO. A united British colony near the coast of Venezuela, comprising the islands of Trinidad (1,862 sq. mi.), Tobago (116 sq. mi.), and adjacent islands. Total area, 1,980 square miles. Total population (Jan. 1, 1940, estimate), 473,455, including 161,000 East Indians and some 5,000 Chinese. Chief towns: (on Trinidad) Port of Spain, the capital (91,200 inhabitants), San Fernando (15,858), Princes Town (5,580), Arima (5,612). The main towns on Tobago are Scarborough (1,515), Roxborough, and Plymouth. Vital statistics (1939): 14,525 births, 7,491 deaths, and 3,043 marriages. Education (1939): 293 schools for primary and intermediate education. The Queen's Royal College and its affiliated schools provide for higher education.

Production and Trade. Petroleum (2,844,000 met. tons, 1940), asphalt, cacao, sugar (120,000 met. tons, 1941), coconuts, coffee, timber, grapefruit, and bananas are the chief products. Natural asphalt is obtained from a pitch lake at La Brea. There are deposits of coal, iron, graphite, gold, and gypsum. The colony has 255 factories, exclusive of the sugar factories and oil refineries. Trade (1939): \$34,762,954 for imports and \$37,359,476 for exports (asphalt \$1,170,571, sugar \$5,087,030, cacao \$1,212,682, and petroleum were the main items). The principal imports were wearing apparel, manufactured goods, foodstuffs, and beverages. Roads (1940): 1,849 miles. A British air service linking Trinidad, Tobago, and Barbados was inaugurated during 1941.

Government. Finance (1940): Actual revenue, by reason of increased returns for customs and excise, exceeded estimated revenue by \$1,500,000, while expenditure exceeded estimated expenditure by \$500,000. The colony is governed under a reformed constitution which went into effect in 1941. A governor, assisted by an executive council, heads the administration. The first meeting of the legislative council under the new constitution was addressed by the governor on May 16, 1941. As now constituted the legislative council consists of the governor as president (with a casting vote in case of a tie), 3 official members, and 15 unofficial members (6 nominated by the governor and 9 elected by the

voters). Governor and Commander-in-Chief, Maj. Sir Robert Young (appointed June 20, 1938).

History. Differences between the government of Trinidad and United States officials over the location of the U.S. naval and military bases to be constructed in Trinidad under the Anglo-American agreement of Sept. 2, 1940, were ironed out early in 1941 (see YEAR BOOK for 1940, p. 744). Agreement on the sites originally selected by the U.S. military and naval experts was announced in Washington and London Jan. 11, 1941. Shortly afterward the Trinidad legislative council authorized the commencement of work on the bases, and actual construction started early in March.

Meanwhile the governor and a member of his executive council proceeded to London to assist in the negotiations that ended with the signing on Mar. 27, 1941, of the Anglo-American treaty concluding the deal of Sept. 2, 1940. Under a lease annexed to the treaty, and signed in Port of Spain, Trinidad, on April 22, the British Crown transferred to the United States government free of rent for 99 years the following pieces of property: (1) Approximately 12 square miles on the north shore of the Gulf of Paria, west of the village of St. Pierre around Entrada Point, Point Dalgada, and Point Gourde, including Gasparillo Island and the Five Islands; (2) about 18 square miles along the boundaries of the Guanapo, Guaico Valencia, and Cumuto Forest Reserves in the north central part of the island, but excluding the eastern main road and the right of way of the Trinidad government railway; (3) 2 square miles northeast of Longdenville, a town in west central Trinidad; and (4) about 96 acres on Saline Bay on the northeast coast, between the Saliboa and Primera Pria rivers.

The United States undertook the construction at the site west of St. Pierre of an important seaplane base and naval station, with facilities for berthing ships, a fleet anchorage, and limited repair facilities, all costing an estimated \$17,855,000. The United States was authorized to remove the quarantine station from Five Islands, upon payment of compensation; to establish defenses in the waters of the Gulf of Paria, on islands in the Dragon's Mouth, and on the mainland at the Serpent's Mouth (northern and southern entrances to the Gulf, respectively), with the proviso that such installations be returned to the Trinidad government should it decide to construct additional defenses of its own; to establish a U.S. fleet anchorage covering about 12 square miles in the Gulf of Paria; and to impound the waters of the Aripo river and construct the necessary dams and pipelines for the use of the United States forces on the island. The United States government also obtained a year's lease on 1,200 feet of wharfage at Port of Spain, and the right to construct 3,000 additional feet of wharfage there under a 99-year lease. It was stipulated that this lease might be voided if the Trinidad government erected satisfactory substitute facilities elsewhere. United States naval officials also planned to dredge the southern channel into the Gulf of Paria to provide two deep-water entrances in this almost landlocked body of water. The United States government agreed to compensate private property owners for expropriation and damage resulting from work on the bases. A detachment of U.S. Marines landed at Port of Spain on Mar. 23, 1941, and on March 31 the United States flag was raised over the naval base which was formally commissioned on Aug. 1, 1941, in the presence of high United States and British authorities. Work was under way during the year on the important United States army air base and military defense post in the center of the island.

The first unit of the United States garrison, comprising coast artillery, infantry, and other detachments, arrived at Port of Spain on May 5, 1941.

On June 11, 1941, the British Colonial Secretary said that owing to Trinidad's satisfactory financial position it was possible to proceed, within the limits imposed by war conditions, with the program of social and economic betterments inaugurated before the war. The governor appointed a representative franchise committee to make recommendations as to the desirability of extending the franchise for the election of members of the legislative council and of reducing substantially the margin between the qualifications for voting and for membership in the legislative, municipal, and county councils. The findings of this franchise committee were expected to be put into effect in time for the 1943 elections.

It was officially announced in Port of Spain that the British government would sign with Venezuela agreements defining their respective interests in the undersea areas of the Gulf of Paria and ceding to Venezuela the island of Patos, within three miles of the Venezuelan coast and long claimed by Venezuela (*Crown Colonist*, London, June, 1941; p. 290). During September, 1941, it was reported that in view of the serious labor shortage caused by the migration of workers to the United States bases under construction the Trinidad government had decided to relax the restrictions on immigration to permit surplus labor from Barbados and other West Indian islands to enter the colony for employment in agricultural occupations.

TRIPOLITANIA. See LIBYA.

TROTTING. See RACING.

TRUCIAL OMAN. See *Oman, Trucial* under ARABIA.

TRUCK CROPS. See HORTICULTURE; producing States under *Agriculture*.

TRUCKING, TRUCKS. See AGRICULTURAL COOPERATION, MOTOR VEHICLES; RAILWAYS.

TUAMOTU ISLANDS. See FRENCH OCEANIA.

TUBERCULOSIS. See BIOLOGICAL CHEMISTRY under *Vitamins*, PUBLIC HEALTH SERVICE; VETERINARY MEDICINE.

TUNGSTEN. The demand for tungsten in the manufacture of armaments in 1940 revealed the very strategic nature of this metal. Increasing demands for it in 1941 and the disruption of shipments from China via the Burma road added to the national concern over its procurement. China has always produced about 8,000 metric tons a year, almost the entire world supply. Imports from China, deflected through an Indo-China route, continued to be received throughout 1941, but at a startlingly diminished rate.

Tungsten is an invaluable metal used to strengthen steel and is consumed chiefly in the manufacture of tools for cutting metals. Electric light and radio tube filaments must be pure tungsten, but consumption for this purpose is not large. Its military uses are: cores in armor-piercing bullets, erosion-resistant liner in heavy ordnance, armor plates, and in gun breeches. As the United States military program grows, molybdenum is expected more and more to be substituted for tungsten in certain high speed steels.

The tungsten stockpile in the United States in December, 1941, was 7,000 tons. By that date United States output had almost reached the 8,000-ton mark, with production capacity to be expanded to a potential 23,000 tons for 1942. The 1942 demand for tungsten, however, was estimated by the OPM in November at 25,000 tons. And the nation looked to home for additional sources of supply to

make up the deficit. New high grade deposits of tungsten ore were discovered during the year in Idaho, which are being developed very rapidly. The United States possesses also deposits of low grade ores which are being worked under government subsidy. But the continued threat that hangs over Chinese imports spurred the government to seek and foster still other sources of supply, especially in South America. In November the United States contracted through the Metals Reserve Company for all of Argentina's tungsten for three years, up to a maximum of 3,000 tons a year of pure tungsten ore, at \$21 a short ton for concentrates of a specified quality. This step is of incalculable importance to the United States in view of the fact that it cuts off this source of supply from Axis consumption, and especially because it ousts Japan from the field, who had hitherto been the United States' chief rival in the South American market. Argentine production has normally been about 2,000 tons a year. The United States also contracted for Bolivia's total output, which has been about 4,000 tons a year. The sure United States market, however, is expected to raise these figures considerably. See GEOLOGICAL SURVEY; MINES, BUREAU OF.

TUNISIA. A French protectorate in North Africa. Capital, Tunis. With an area of 48,332 square miles, Tunisia had a population of 2,608,313 at the 1936 census, including 2,335,623 Arabs and Bedouins, 59,485 native Jews, 108,068 French citizens, 94,289 Italians, and 7,279 Maltese. The estimated civilian population on Jan. 1, 1939, was 2,700,000. Italian census figures published July 22, 1940, placed the number of Italians in Tunisia at 125,000. The 1936 census populations of the chief towns were: Tunis, 219,578; Sfax, 43,333; Sousse, 28,465; Bizerte, 25,872; Kairouan, 22,991. Moslems comprise 89.5 per cent of the total population. The school attendance on Dec. 31, 1937, was 96,520.

Production. The chief occupations are agriculture, stock raising, fishing, and mining. Yields of the chief crops in 1939 were (in metric tons): Wheat, 505,000; barley, 350,000; oats, 30,000; olive oil, 60,000, wine, 988,000 hectoliters (hectoliter equals 26.42 U.S. gal.). Cork production (1940) was 6,374 metric tons. Dates, nuts, henna, and citrus fruit are other products. The 1937 livestock estimates were 3,372,894 sheep, 507,302 cattle, 144,762 camels, 1,672,352 goats, 109,787 horses, 156,554 asses, and 56,615 mules. Output of the chief minerals in 1939 was (in metric tons): Phosphate rock, 1,608,045; iron ore, 764,731; lead ore, 28,280; pig lead, 23,403; mercury ore, 1,943; zinc ore, 903; fluor spar, 2,473. The principal native manufactures are woolen goods, carpets, leather goods, and pottery.

Foreign Trade. For the first six months of 1939 (publication of later statistics was suspended), imports amounted to 849,121,000 francs (699,477,000 for the same period of 1938) and exports to 752,408,000 francs (720,266,000). Trade is mainly with France. Wheat, olive oil, phosphates, and wine normally account for half the total exports.

Finance. Budget estimates for 1940 placed receipts at 811,198,000 francs and expenditures at 810,954,334. Public debt on Jan. 1, 1938, 1,009,593,000 francs (franc averaged \$0.0251 in 1939, \$0.0208 in 1940).

Transportation. With 1,123 miles of line, the Tunisian State railways in 1938 carried 2,153,587 metric tons of freight. Highways extended 7,887 miles in 1939. Civil airlines connect Tunis with Bône, Algiers, Oran, and Casablanca in French North Africa, with France and normally with Italy.

Government. Tunisia is a regency under the con-

trol of the French Foreign Office, which acts through a Resident-General who is also Minister of Foreign Affairs for Tunisia. There is a ministry of 11 departments (8 French and 3 Tunisian). The nominal ruler in 1941 was Sidi Ahmed Bey, who succeeded to the throne July 10, 1929.

History. The Vichy Government continued to maintain its control over Tunisia throughout 1941 as a result of the delicate balance of forces in warring Europe which made Hitler unwilling to grant Mussolini's demand for inclusion of the protectorate in the Italian African empire (see FRANCE, GERMANY, and ITALY under *History*). The German Government in May and Italy in June were reported to have pressed Marshal Pétain for concessions in Tunisia similar to those granted the Germans in Syria (q.v.). This pressure apparently was resisted, due to the opposition of Gen. Maxime Weygand, French pro-consul in North Africa, and of both native and French inhabitants. The British, however, suspected Tunisian authorities of facilitating shipments of German and Italian troops and arms to Libya through the British sea and air blockade. On May 28 British bombers, pursuing a Libya-bound Italian convoy, attacked the Tunisian port of Sfax, damaging port works and causing French and native casualties. The removal of General Weygand in November facilitated Axis infiltration in Tunisia.

Economic conditions remained difficult, increasing unrest among both natives and Free French sympathizers. The import trade remained virtually at a standstill. A number of factories were established to supply commodities previously imported. On March 18 all exports were made subject to license, following establishment of a special export license tax on January 25. Considerable quantities of foodstuffs were shipped to France during the year, but mining and other production was retarded by transportation and shipping difficulties.

TUNNELS. A number of major and minor works for hydraulic, highway, railway, and mining purposes have progressed steadily during 1941. The longest tunnel now under construction is the 85-mile bore of the new Delaware River water supply to New York City. On the pressure tunnel of the Boston water supply at Boston, Mass., shafts 260 ft. deep are being sunk for the extension to the Chestnut Hill reservoir. (See WATER WORKS)

Another long bore is the Continental Divide tunnel 13.10 miles long, on the Colorado-Big Thompson irrigation and power project of the U.S. Bureau of Reclamation. It pierces the continental divide of the Rocky Mountain range. Water pumped up to its western end from the Granby reservoir on the Colorado River (on the Pacific slope) will flow by gravity to the Thompson and South Platte rivers to irrigate lands on the eastern slope, in Colorado. Its method of construction is unusual in that the tunnel is driven from the ends only, with no intermediate shafts or headings. It is said to be the longest tunnel ever built in this way. The plan was adopted in order to avoid disfiguring the National Park above the tunnel by unsightly work at shafts or adits. But it lengthened the construction period, and also the difficulties of drainage and ventilation, while the concrete lining must wait until all excavation is finished, instead of following closely behind the excavation at certain points. While the tunnel is mainly in rock, some of this is broken and loose, so as to require steel lining to hold it until the concrete lining can be placed. It will be 9 ft. 9 in. in finished diameter. About 33 per cent of its length has been driven, and the tunnel is expected to be finished and lined by 1946.

During 1941 (fiscal year ending with June), the U.S. Bureau of Reclamation completed six tunnels, aggregating 53,128 ft. in length. These bring the number of the Bureau's tunnels to 367, with a total length of nearly 100 miles (516,713 ft.). Most of them are on irrigation aqueducts and canals for irrigation projects, but others pass around the ends of large dams, for the purpose of carrying the water of the river or stream during the construction of the dam, while in some cases they serve also to form a part of the spillway system which carries off the overflow from the reservoir. Some of these diversion tunnels are very large, 23 ft. or more in diameter.

At Chicago, two parallel tunnels, 16 ft. in diameter and each a mile in length, are being driven under the bed of Lake Michigan to connect the new South-Side filtration plant with intakes in deep water. Tunneling for the first unit of the new subway system at Chicago is practically completed.

Highway tunnels are required occasionally in modern construction through mountainous regions in order to secure favorable locations and to keep within prescribed limits of grades and curves, or in some cases to avoid dangerous open-air locations. This is notably the case in California, where a recent example is the introduction of two tunnels, 500 and 700 ft. long, on the Angeles Crest highway. Here two ridges which intercept the line of the road have faces so nearly vertical that open side-hill cuts around them were not practicable. The two tunnels are separated by only 100 ft. of fill across the intervening ravine. In section, they are arched, 35 ft. wide and 22 ft. 3 in. high.

Leading in subaqueous highway tunnels is the two-mile Battery-Brooklyn tunnel across the mouth of the East River in New York Harbor, which is now well under way, and is scheduled for completion in 1944. At its mid-length, where it passes under Governor's Island, there will be a shaft with ventilating plant. The shaft will also be used for construction, so that headings can be driven from it in both directions in order to meet those being driven from the shore ends. Traffic in the first (south) tube of the Lincoln Tunnel under the Hudson River, at New York, has become so heavy that work is to be resumed on the parallel (north) twin tunnel. This work was stopped two or three years ago, as the one tube was sufficient for the traffic at that time.

The 3,400-ft. Bankhead tunnel carrying a highway tunnel under the river at Mobile, Ala., was opened to traffic early in 1941. A project for a much longer tunnel under the Delaware River, to connect Philadelphia, Pa., and Wilmington, Del., had to be abandoned, as under the war emergency the government refused to grant priority release for the materials needed. However, this \$19,000,000 project is to be included in the program of public-works for postwar construction. A highway tunnel under the Panama Canal, near its Pacific end, has been proposed, owing to the heavy traffic concentrated at a ferry crossing. The tunnel plan was adopted as preferable to a bridge.

Most of the tunnels being built for railway purposes are on diversion or relocated lines replacing original lines that will be submerged in reservoirs created by some of the numerous large dams now under construction. A line improvement on the Chesapeake & Ohio Railroad, however, includes a new single-track tunnel 4,200 ft. long through the Blue Ridge mountains between Afton and Waynesburg, Va. The original single-track tunnel, now 83 years old, is practically paralleled by the new bore, but is of such small section as to restrict the operation of the large modern locomotives and rolling-

stock. It was considered more convenient and economical to build a new tunnel than to enlarge the old tunnel while carrying traffic. The tunnel will be of ample section to accommodate any equipment, and this will also give much better ventilation, with less discomfort for the train crews due to heat and smoke in the old tunnel. The new diversion line, with the tunnel and its approaches, will also have somewhat better grades and alignment.

Two notable mining tunnels were completed in 1941. The Carlton Tunnel, in Colorado, provides drainage for the flooded low-level workings of gold mines in the Cripple Creek district, thus enabling the mines to resume work and extend the workings to greater areas and depths. It is six miles long, and 10 x 11 ft. in section. Tunneling was begun in July, 1939, and completed in July, 1941, although it had been expected to last until 1943. Small branch drifts are to be driven along fissures and under the mines to expedite the flow of water. The Elton tunnel, in Utah, serves the double purpose of drainage of mine workings 2,500 ft underground and also the transportation of ore from the mines at Bingham to a smelter plant at Tooele. It is 24,142 ft. long, 10½ ft. wide and 11½ ft. high inside the timber lining. Work was begun in March, 1937, and completed in July, 1941. See DAMS; RAPID TRANSIT.

E. E. RUSSELL TRATMAN.

TUOLENE. See CHEMISTRY, INDUSTRIAL.

TURF. See RACING.

TURKEY. A republic comprising parts of Asia Minor and the Balkan peninsula as well as Imbros, Tenedos, and the Rabbit Islands in the Aegean Sea. Capital, Ankara (Angora).

Area and Population. The area, including the Sanjak of Alexandretta (Hatay) but excluding 452 square miles of marshes and 3,256 square miles of lakes, is 296,346 square miles (13,012 in Europe and 283,334 in Asia). The Sanjak of Alexandretta (area, 1,930 square miles; pop., about 228,000) was ceded to Turkey by France on June 23, 1939. The population of Turkey at the census of Oct. 20, 1940, was 17,869,901 (16,158,018 at the 1935 census). Populations of the chief cities in 1940 were: Istanbul, 789,346; Izmir (Smyrna), 184,362; Ankara (Angora), 155,544; Seyhan (Adana), 89,990; Bursa (Brusa), 77,348; Eskisehir, 60,514; Gaziantep, 57,314; Konya, 56,698; Kayseri, 53,908.

Defense. Military service is compulsory. The active strength of the Turkish army before the outbreak of the European War was about 180,000 men. All trained reserves were mobilized during 1939 and 1940. As of Jan. 1, 1941, an estimated 800,000 troops, excluding the air force of 3,500, were under arms. The air force in 1940 had about 370 first-line and 500 second-line planes. The navy in 1941 consisted of the rebuilt German battle cruiser *Goeben* (Turkish name, *Yavuz*) of 23,100 tons, 2 old but modernized cruisers, 4 destroyers, 9 submarines, 2 gunboats, 3 minesweepers, and various auxiliary craft.

Education and Religion. Illiteracy was estimated at 55 per cent of the adult population in 1935, but only 2,517,878 were literate in the Latin alphabet, introduced in 1928. Students enrolled in 1938-39: Primary, 813,532; secondary, 84,355; lycées, 24,582; normal schools, 3,259; professional schools, 8,335; universities and other institutions of higher learning, 10,390. At the census of 1935 there were 15,838,673 Moslems, 125,046 Orthodox Christians, 78,730 Jews, 32,155 Roman Catholics, 44,526 Gregorians, 11,229 Armenians, 8,586 Protestants, and 12,967 others. There is no state religion.

Production. Agriculture supports four-fifths of the population. Production of the chief crops in 1940 was (in metric tons): Wheat, 4,105,000; barley, 2,255,000, corn, 758,000; rye, 483,000; oats, 327,000; tobacco, 67,700; beet sugar, 94,500 in 1939-40; rice, 49,304, potatoes, 260,026; cotton, 219,398. The 1940 wool clip was 33,295 metric tons; mohair clip, 7,721. Livestock statistics on Jan. 1, 1941: 25,299,730 sheep, 9,395,303 cattle, 946,873 horses, 925,486 buffaloes, 1,387,204 asses, 11,185,457 ordinary goats, 5,236,691 mohair goats, 193,290 camels, 73,822 mules. The 1940 mineral output was (in metric tons): Coal, 3,006,000; lignite, 149,150; copper ingots, 8,731; chrome ore, 110,038; iron ore, 130,344; and for other minerals in 1939: Boracite, 14,699; zinc, 14,424; silver-lead, 10,392; emery, 9,528; zinc-lead, 8,007; fuller's earth, 7,221; manganese, 3,339; antimony, 1,270; mercury, 359; magnesite, 493. The 1940 industrial production included (metric tons): Cotton yarn, 27,433; woolen yarn, 8,429; paper, 9,540; cement, 266,637; glass, 7,353. A government-sponsored industrialization program inaugurated in 1934 resulted in the establishment of numerous factories, including steel, textile, paper and flour mills; glass, soap, and chemical factories; sugar refineries; cement and canning plants; olive-oil presses and refineries; leather tanneries, hydro-electric plants, etc.

Foreign Trade. Imports in 1940 were valued at 68,922,700 Turkish pounds (£ T118,248,934 in 1939); exports, £ T111,446,500 (£ T127,388,997 in 1939). Imports in 1940 came principally from Italy, £ T11,224,300; Rumania, £ T10,806,000; United Kingdom, £ T9,665,300; Germany, £ T8,083,000; United States, £ T7,446,900. Of the 1940 exports, Italy took £ T17,951,300; United States, £ T15,738,740; Rumania, £ T11,987,200; United Kingdom, £ T11,550,900; Germany, £ T9,686,500. Leading 1940 exports were: Leaf tobacco, £ T24,222,000; raw cotton, £ T8,129,000; shelled filberts, £ T6,599,000; unwashed mohair, £ T6,582,000; olive oil, £ T6,070,000. See TRADE, FOREIGN.

Finance. The ordinary budget for 1941-42 (June 1 to May 31) anticipated revenues of £ T309,743,001 (£ T268,481,000 in 1940-41) and expenditures of £ T309,740,396 (£ T268,476,321 in 1940-41). Ordinary defense appropriations were £ T77,995,000 in 1940-41 and the same in 1941-42. Extraordinary defense costs, covered mainly by increases in note circulation, amounted to £ T190,913,534 in 1940-41. Notes in circulation totaled £ T281,000,000 on Dec. 31, 1939, and £ T490,000,000 on July 31, 1941. Average exchange value of the Turkish pound was \$0.8024 in 1939, \$0.725 in 1940.

Transportation. As of Dec. 31, 1940, railway lines extended 4,619 miles, of which all except 270 miles were state-owned and operated. A law of June 3, 1941, authorized extension of railway lines from Diyarbakir and Elazig stations to the frontiers of Iraq and Iran. During the fiscal year 1939-40, the state lines carried 25,636,009 passengers and reported earnings of £ T43,882,390. Highways extended 25,274 miles in 1940 (see ROADS AND STREETS). During the summer months of 1941 there was a daily air service between Ankara and Istanbul; no foreign airlines entered the country. Istanbul handled 76.1 per cent of the country's imports and 35.9 per cent of the exports in 1939. Vessels calling at Istanbul and in transit during 1940 numbered 18,247 of 7,523,233 tons, against 20,556 ships of 10,030,581 tons in 1939.

Government. The Constitution of Jan. 20, 1921, as amended in 1924 and 1934, vests executive and legislative power in the Grand National Assembly,

consisting of 424 deputies elected for four years by universal male and female suffrage. The Assembly exercises executive power through the President, elected for four years by the Assembly, and through the Council of Ministers, chosen by the President. In practice the President wields dictatorial powers. President in 1941, Gen. Ismet Inonu, who was elected to succeed President Kemal Ataturk on Nov. 11, 1938, and reelected Apr. 3, 1939. The People's party, the only legal political organization, in December, 1938, elected President Inonu as President General of the party for life. The Cabinet appointed Jan. 25, 1939, and reorganized Apr. 4, 1939, was headed by Dr. Refik Saydam as Premier.

HISTORY

The condition of the people of Turkey in 1941 was economically fair and politically quiet. Internal trade, under thoroughgoing governmental control, was preserved from the disorder with which the dislocation of imports and exports, by reason of war in Europe, threatened it. Foreign trade, impaired with regard to lands overseas, increased, as to exports especially, through shipments overland. The maintenance of four times as great an army as normal helped to swell the budget beyond the means of the public revenue, thus giving the Government moderate financial worries. Tense foreign relations overshadowed all these other national concerns. See map on page 291.

Turkey had at the outset of 1941 six neighbors adjacent to it on land. All six were invaded and occupied in whole or in part, in the course of the year: three—Greece, Bulgaria, and Russia—by Germany and her allies; the other three—Syria, Iraq, and Iran—by British and allied forces. The immunity of Turkey somewhat resembled that of the bullseye of a target completely rimmed with bullet holes. It differed in that Turkey owed its escape from invasion in part to its own Government's efforts, as well as in great part to luck. The Turkish foreign policy managed, thanks to both in combination, to maintain good relations with Germany and at the same time to keep in effect something of the Turkish alliance of 1939 with Great Britain.

General Aspects of Turkey's Foreign Relations. By the end of spring the German and allied forces controlled Bulgaria and Greece, thus toeing the whole Turkish European border. The downfall of the last members of the Balkan family of nations left Turkey without hope of an ally close at hand in the event of invasion of her own soil. It shook confidence in the power of Great Britain to protect Turkey, since British military aid to Greece had failed.

A considerable part of the normal Turkish exports had gone by sea to Great Britain. The agreement of 1939 with Great Britain had provided for Turkey's receiving from that country a quantity of material necessary to its defense. The course of the war in 1940 and 1941 rendered it impracticable, first, to ship from England the promised military material and, later, even to move Turkish goods to Great Britain in the usual quantities. On the other hand German possession of the railways communicating with Turkey by the European mainland assured a ready absorption in Germany of a variety of goods meeting German needs. Economic considerations thus pressed the Turkish Government to deal freely with Germany, despite the danger inherent in Nazi economic penetration.

In the earlier part of 1941 Turkish misgivings had to do not alone with Germany but also with Russia, these two being still at peace under the agreement of 1939. By the middle of the year, the

German invasion of Russia removed the risk of a Russian or Russo-German attack, though it cost Turkey her extensive trade with Russia over the Black Sea.

Dealings with the Axis. The first phase of Turkish dealings with Germany and her satellites developed in February. Germany's position in Bulgaria was then rapidly maturing into full control of that land and its Government. Turkey at this moment, on February 17, issued jointly with Bulgaria a declaration that neither of the two would commit aggression against the other. The purpose of Turkey's part in this declaration was variously interpreted. The Turkish journal *Vakit* called it the possible "cornerstone of a new Balkan entente." Others of the Turkish press denied that it conflicted with the Turco-British agreement, and declared it likely to assure peace in the Balkans. In some quarters outside Turkey it was thought to carry a notification to Germany that Turkey would acquiesce in German occupation of Bulgaria and would abstain from any British effort against that step. It was promptly followed by Germany's taking possession.

Greece next came under German attack. It had held against Italian invasion for six months. German forces prepared in the spring to make an end of Greek resistance. Great Britain, having to some degree recovered from reverses of 1940, sent an army to help Greek defense. Turkey had to decide whether to join in this defense or face the prospect of entire German domination on her European border. The question involved military judgment: the active army was strong in numbers but lacking in airplanes and other equipment proper to the warfare of the day. The alliance with Great Britain had stipulated that the British provide such equipment, and the Turkish Government, in the other party's apparent failure to perform this obligation, might regard itself as not bound to help in the British military operation. German diplomacy was reported, as early as March, to be working hard to dissuade Turkey from sending her soldiers into Greece. It was asserted also that German help was given or offered to Tashmak, an Armenian nationalistic society that might be able to disturb Turkish internal peace. The sudden and thorough success of Germany's military move against the Greek and British forces in May settled matters, leaving no chance for a belated Turkish entry, even had Turkey meant to wait and see how the opponents were matched.

With the conquest of Yugoslavia and Greece, a German drive across Turkey to the Suez Canal and the oil fields of the Middle East was generally expected. Consequently the Turkish Government quickly accepted a German offer of a ten-year non-aggression treaty. It was signed in Ankara June 18 and ratified by both parties soon afterward. On June 22 Hitler launched his surprise invasion of Russia. It then became clear that the nonaggression treaty was designed to safeguard Germany's southern flank during the Russian campaign. This treaty, providing for mutual consultation on controversial issues, appeared at variance with the Anglo-Turkish alliance, notwithstanding a prefatory clause safeguarding Turkey's existing contractual obligations.

At the instance of the German Ambassador, negotiations for a new commercial treaty started in June. The resulting treaty was not executed until October 9, after many weeks of bargaining. It turned out that Germany wanted, above all, some of the chromite ore that Turkey was exporting, under an agreement of 1939, to Great Britain. Turkey wanted military material to fill the need left by

the nonfulfilment of the bargain with Great Britain. Eventually Turkey undertook to deliver to Germany 90,000 tons of chromite ore in the years 1943-44, on condition that Germany should previously have delivered military material to the amount of 18,000,000 Turkish pounds. The treaty, carrying this arrangement, was signed October 9 and ratified in December. It provided for trade to the total of about 100,000,000 Turkish pounds on either side, in the period to end with Mar. 31, 1943. The delivery of chromium was deferred to the year following that date. The contract with Great Britain thus had time to expire without Turkish violation. Turkey was to send, in addition to chromite ore (23,000,000 Turkish pounds in all), foodstuffs and various minerals. Turkey also made agreements on trade with Hungary and with Switzerland.

Relations with Other Governments. Russia joined Turkey, March 24, in an exchange of declarations whereby each undertook not to attack the other in the event of the latter's becoming a belligerent. This gave some reassurance of Russia's not intending to join another power in a possible cooperative carving of Turkish territory. The later course of Russian affairs left the performance of the declaration entirely to Turkey, which remained scrupulously neutral between Russia and Germany.

Late in February the British Government made a particular effort to come to a clear understanding with Turkey on what to do about the threat brought to the Balkan states by the presence of the Germans in Bulgaria. Anthony Eden and Sir John Dill visited Ankara February 26-27 and discussed the situation with the Turkish President and the Foreign Minister. An official announcement said that the two governments had once more asserted their complete attachment to their alliance and had reached complete agreement on all problems discussed. In the outcome, however, Turkey did not appear at Britain's side in Greece.

The British attack on the French Government of Syria in June received a mild degree of support from Turkey. French efforts to bring reinforcements for the Syrian defense through Turkish territory were forbidden, and small warships escaping from Alexandretta to Turkish waters were disarmed and their crews interned. On the other hand the British sinking of a French troopship loaded with soldiers, in the Turkish harbor of Adalia, caused the Turkish Government to protest to Great Britain at the infringement of neutral territory.

U.S. Supplies to Turkey. It was announced December 3 that President Roosevelt had declared the defense of Turkey vital to the United States and had directed the Administrator in charge of the grants of military aid to fill the needs of Turkey as fast as possible. The action of the President made regular the dispatch of armament; but goods of this sort had already been sent indirectly, according to report in the press.

Other Events. The National Assembly enacted additional taxes designed to help cover the deficit shown in the year's budget. Robert College and the American College for Girls, both at Istanbul, closed May 15, at the behest of the Turkish Government, reportedly for reasons connected with the war.

See BULGARIA, GERMANY, GREAT BRITAIN, and UNION OF SOVIET SOCIALIST REPUBLICS, under *History*; LEND-LEASE ADMINISTRATION; NAVAL PROGRESS; PORTS AND HARBORS; UNITED STATES under *Foreign Affairs*; WORLD WAR.

TURKEMENIAN SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

TURKS AND CAICOS ISLANDS. See JAMAICA.

TUTUILA. See SAMOA.

TVA. See TENNESSEE VALLEY AUTHORITY.

TYPHOONS. See HURRICANES.

TYPHUS. See GERMANY; PUBLIC HEALTH SERVICE.

UBANGI-SHARI. See FRENCH EQUATORIAL AFRICA.

UGANDA. A British East African protectorate. Area, 93,981 square miles, including 13,680 square miles of water. Population (1940), 3,790,689, comprising 3,769,758 Africans, 18,725 Asiatics, and 2,206 Europeans. Education (1939): 292,097 pupils in schools of all kinds. There is a college at Makerere for higher education. Bantu languages are spoken by some 2,400,000 of the Africans. Chief towns: Entebbe (capital), Kampala, and Jinja.

Production and Trade. Cotton (375,000 bales estimated for 1941-42; 370,000 bales produced in 1940-41), cottonseed, coffee, sugar, hides, skins, salt, tin (346 long tons, 1939), gold (11,060 fine oz., 1940), and timber are the main products. There are large numbers of cattle, goats, and sheep. Uganda and Kenya are one administrative unit for customs purposes. Trade for 1940 (Kenya and Uganda combined), including bullion and specie: £9,552,000 for imports and £9,252,000 for exports. Roads (1940): 2,500 miles.

Government. Budget estimates (1941): £2,067,710 for revenue and £1,960,754 for expenditure. Revenue and expenditure for 1939 amounted to £1,717,927 and £2,259,576, respectively. Public debt (1939): £2,850,000. The governor, in carrying out the functions of government, is assisted by an executive council of 7 members and a legislative council of 6 official members and 4 nominated unofficial members. Governor and Commander-in-Chief, Sir Charles Dundas (appointed July 8, 1940).

History. In order to raise additional revenue for war purposes there have been increases in taxation affecting customs, excise, internal postage and telegrams, trading licenses, gasoline tax, income tax, nonnative poll tax, and cotton tax. Legislation was passed to enable an export tax to be imposed on any commodity which, because of the war, might obtain an abnormally high price in markets outside Kenya and Tanganyika. See KENYA under *History*.

UKRAINIAN SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*. Also see GERMANY under *History*.

ULCER, Gastric. See MEDICINE AND SURGERY under *Advances in Surgery*.

ULSTER. See IRELAND, NORTHERN.

UNEMPLOYMENT. See LABOR CONDITIONS under *Employment and Unemployment*; also, CIVILIAN CONSERVATION CORPS; WORK PROJECTS ADMINISTRATION. For **UNEMPLOYMENT COMPENSATION AND INSURANCE**, see LABOR LEGISLATION; SOCIAL SECURITY BOARD; articles on States under *Legislation*.

UNFEDERATED MALAY STATES. See BRITISH MALAYA.

UNION ISLANDS (TOKELAU). See NEW ZEALAND under *Area and Population*.

UNION NOW. *Union Now* is the title of a book by Clarence K. Streit, which proposed that the more experienced democracies, in order to avoid war and to establish a lasting peace, join in a federal union based on the broad principles of the American Constitution and designed to grow gradually into a World United States. World sales, including distribution as a book dividend by the Book of the Month Club in August, 1941, have totalled more than 250,000 copies. The first public edition of *Union Now* in March, 1939, provoked immediate

widespread discussion and led to the formation of groups devoted to spreading the idea in Great Britain, France, Switzerland, the United States, Australia, South Africa, and some South American countries. The United States organization is Federal Union, Inc., 10 E. 40th St., New York.

In March, 1941, Mr. Streit brought out his second book *Union Now With Britain* to conform his proposal to wartime conditions. Hitler having reduced the original "nucleus democracies" from fifteen to seven, accordingly in July, 1940, Mr. Streit published a "Declaration of Interdependence" which revised the original proposal to include the seven free-remaining democracies. *Union Now With Britain* covers this revised proposal.

Various polls have presented the question of federal union to our citizens, the last of these during 1941 being published in December by the magazine *Fortune*. Its results showed a five-fold increase since a previous poll reported in August, also by *Fortune*. The figures revealed that about 30,000,000 adults of the United States favored "a union of democracies in all parts of the world to keep order after the war." Immediately after declaration of war on the United States by Japan, Germany, Italy, and their allies, Federal Union, Inc., again brought forth a petition tuning the Union Now proposal to our direct participation in the war.

At the close of 1941 there were over 8,000 dues-paying members and about 120 chapters in key cities throughout the country. The first national convention of members was held in Cleveland, Ohio, in a three-day session in June, and was represented by delegates from nearly all of the chapters. Resolutions on policy, economic aims, and other important directives were discussed and effected. The officers of Federal Union, Inc. include Clarence K. Streit, president, E. W. Baldof, director; A. J. G. Priest, acting chairman; Wm. Jay Schieffelin and John W. Nason, vice-chairmen; P. F. Brundage, secretary, and John Howard Ford, treasurer.

Similar, wholly independent organizations exist in Great Britain, Eire, Canada, Australia, New Zealand, Argentina, and the Union of South Africa.

UNION OF SOUTH AFRICA. See SOUTH AFRICA, UNION OF.

UNION OF SOVIET SOCIALIST REPUBLICS (U.S.S.R.). A State comprising the greater part of the former Russian Empire. Capital, Moscow.

Area and Population. The area as of Aug. 31, 1939, was about 8,200,000 square miles (73 per cent in Asia and 27 per cent in Europe). The census of Jan. 17, 1939, showed a population of 170,467,186 (88,802,205 females and 81,664,981 males), compared with 147,027,915 at the 1926 census. The urban population at the 1939 census was 55,909,-

AREAS INCORPORATED INTO THE USSR

	Date of annexation	Area, sq miles	Population, est Jan 1, 1940
Eastern Poland	Sept 28, 1939	75,000 ^a	12,500,000 ^{ab}
Finnish provinces	Mar 12, 1940	13,558	?
Rumanian provinces			
Bessarabia	June 28, 1940	17,151	3,200,000
Northern Bukovina	June 28, 1940	1,737	500,000
Lithuania ^a	Aug 3, 1940	22,964	2,925,000
Latvia	Aug 5, 1940	25,402	1,951,000
Estonia	Aug 7, 1940	18,359	1,122,000
Total		174,171	22,198,000

^a Taking into account the transfer of Vilna Territory (area, 2,570 sq. miles; pop. 457,000) to Lithuania by the Soviet-Lithuanian treaty of Oct 10, 1939. ^b Approximate. ^c The great bulk of the inhabitants of Finnish territories ceded to the U.S.S.R. (about 450,000) was evacuated to Finland

908; rural, 124,557,278. Following the outbreak of the European War on Sept. 1, 1939, the foregoing territories were annexed to the Soviet Union, only to be reconquered by German, Finnish, and Rumanian forces in 1941.

The newly acquired Polish territories were incorporated in the Ukrainian and White (Byelo) Russian Soviet Socialist Republics, Oct. 1-2, 1939. The Finnish provinces on Mar. 31, 1940, were joined to the Karelian S.S.R., which was then renamed the United Karelo-Finnish S.S.R. and raised to the status of a constituent republic of the U.S.S.R. The major part of Bessarabia was merged with the Moldavian Autonomous S.S.R. on Aug. 2, 1940, to form the constituent Moldavian S.S.R. The remainder of Bessarabia, together with Northern Bukovina, was incorporated in the Ukrainian S.S.R. Lithuania, Latvia, and Estonia were given the status of constituent republics upon annexation. The addition of these five new units raised the number of constituent republics of the Soviet Union from 11 to 16. These republics, with their capitals, areas, and populations (Soviet statistics), are given in the accompanying table.

USSR. CONSTITUENT REPUBLICS

States	Capitals	Sq kilo-meters	Populations 1939
Russian S F S R	Moscow	16,610,500	109,278,614
White (Byelo) Russian S S R	Minsk	234,800	10,300,000
Ukrainian S S R	Kiev	533,300	38,900,000
Azerbaijan S S R	Baku	86,000	3,209,727
Uzbek S S R	Tashkent	378,300	6,282,446
Armenian S S R	Erivan	30,000	1,281,599
Georgian S S R	Tbilisi	69,600	3,542,289
Turkmenian S S R	Ashkhabad	443,600	1,253,985
Tajik S S R	Stalinnabad	143,900	1,485,091
Kazakh S S R	Alma Ata	2,744,500	6,145,937
Kirghiz S S R	Frunze	196,700	1,459,301
Karelo-Finnish S S R	Petrozavodsk	196,000	463,100*
Moldavian S S R	TIraspol	52,900	3,200,000
Latvian S S R	Riga	65,791	1,950,000
Lithuanian S S R	Vilna	52,822	2,880,000
Estonian S S R.	Tallinn	47,549	1,120,000

* Exclusive of inhabitants remaining in ceded Finnish area.

The populations of the 29 leading cities at the 1926 and 1939 censuses, with the percentage increases for that period, were as follows:

POPULATIONS OF CITIES 1926 AND 1939

City	Dec 17, 1926	Jan. 17, 1939	1939 in % of 1926
Moscow	2,029,425	4,137,018	203.9
Leningrad	1,690,065	3,191,304	188.8
Kiev	513,637	846,293	164.8
Kharkov	417,342	833,432	199.7
Baku	453,333	809,347	178.5
Gorky	222,366	644,116	289.7
Odessa	420,862	604,223	143.6
Tashkent	323,613	585,005	180.8
Tbilisi	294,044	519,175	176.6
Rostov-on-Don	308,103	510,263	165.6
Dnepropetrovsk	236,717	500,662	211.5
Stalino....	174,230	462,395	265.4
Stalingrad	151,490	445,476	294.1
Sverdlovsk	140,300	425,544	303.3
Novosibirsk	120,128	405,589	337.6
Kazan	179,023	401,665	224.4
Kuibyshev	175,636	390,267	222.2
Saratov	219,547	375,860	171.2
Voronezh	121,612	326,836	268.7
Yaroslavl	114,277	298,065	260.8
Ivanovo	111,460	285,069	255.8
Arhangel	78,774	281,091	366.1
Omak	161,684	280,716	173.6
Chelyabinsk	59,307	273,127	460.5
Tula	155,005	272,403	175.7
Minsk	131,803	238,772	181.2
Vladivostok	107,980	206,432	191.2
Stalinsk	3,894	169,538	4,353.8
Kirov	62,097	143,181	230.6

Education. During the two decades ending in 1937, illiteracy was reported to have declined from 67.7 per cent to less than 8 per cent. In the academic year 1940-41, pupils attending elementary

and secondary schools numbered about 36,765,000. There were about 1,200,000 students in technical schools and workers' faculties; about 1,800,000 children in nurseries and kindergartens, exclusive of 5,700,000 children placed in collective farm nurseries and kindergartens during harvest season; and 550,000 or more students in 781 universities and colleges.

Production, etc. In the Soviet Union transport and communications are conducted as Federal departments. Banking is centralized in a State Bank under government control. Distribution is socialized, with retail trade in the cities conducted mainly by local administrative bodies and in the villages by consumer cooperatives. Industrial production is carried on largely by State enterprises, operating under the general direction of appropriate Commissariats (government departments). A State Planning Commission (Gosplan) plots the objectives for each year and for five-year periods. An Economic Council acts as a coordinative body. An organization in the Commissariat of State Control checks and supervises results.

State planning is an essential of Soviet economy. The planning system is designed to direct and coordinate the employment of the energies and resources of the country for orderly development. The planning system, however, goes beyond the economic field. It includes science, education, public health, and the extensive social services designed to safeguard the welfare and security of the citizenship. Beginning in 1939, the Soviet Government withheld publication of detailed information on industrial production, agriculture, and other phases of economic development.

Industry and Mining The value of production of large-scale industry in 1940 was reported at 110 billion rubles at prices of 1926-27, an increase of 11 per cent over 1939. Total industrial output was valued at 137 billion rubles. An output of 162 billions was planned for 1941. Newly developed industrial regions between the Volga and the Urals, in the Kuznetsk area of Siberia, around Novosibirsk on the Trans-Siberian Railway, and in Eastern Kazakhstan were adding their production in 1941 to the major industrial areas around Moscow, Leningrad, and the Ukraine. The output of the chief industries in 1938 was: Electric power, 132,600,000,000 kilowatt-hours; coal, 132,900,000 metric tons (164,600,000 tons, estimated, in 1940); peat, 26,450,700 metric tons; oil, 32,230,000 metric tons (29,700,000, estimated in 1940); pig iron, 14,600,000 metric tons; steel, 17,700,000 metric tons; cement, 5,696,000 metric tons; trucks, 184,000 units; tractors, 32,200 units; cotton cloth, 3,491,000,000 meters; woolen goods, 114,000,000 meters; footwear, 213,000,000 pairs; sugar, 2,500,000 metric tons. Average daily carloadings were 88,000 cars. Coke output in 1940 was estimated at 16,500,000 metric tons; aluminum, 73,000.

Agriculture. Since 1928 the structure of agriculture has been completely reorganized. The small, individual peasant holdings, averaging 12 to 14 acres, have in large measure given way to large-scale collective farms in which the peasants pool their acreage. (Each collective farm family, however, has its own garden plot and domestic farm animals.) This new set-up has made possible better organized methods of production with a high degree of mechanization. The transition was effected largely during the years 1929-33. In 1929 less than 4 per cent of the peasant households were represented in the collective farms; by Jan. 1, 1938, the percentage had risen to 93.5. There were 244,000 collective farms averaging about 1,200 acres in

1938. Some 800,000 peasant households still worked individual holdings. In addition, large State farms operated about 12 per cent of the sown area.

For 1940 the total area sown to crops was reported as 152,662,000 hectares; the harvest of grain, as 112,000,000 metric tons. For comparison with earlier years, see accompanying table.

SOWN AREA AND GRAIN HARVEST

	Area of all crops (hectares *)	Area of grain crops (hectares *)	Grain production (metric tons)
1913	105,000,000	94,400,000	80,100,000
1931	136,300,000	104,400,000	69,480,000
1936	133,800,000	102,400,000	82,700,000
1938	139,900,000	102,400,000	94,900,000

* Hectare equals 2.47 acres

Grain exports, in metric tons, averaged 10,553,000 annually for the years 1909-13 and were 2,080,000 in 1938. The sugar production in 1940 was reported at 4,160,000 cwt; tea, 23,500 tons; cotton, 4,300,000 bales in 1941; sugar beets, 1,899,870 tons in 1939, potatoes, 1,868,317 tons in 1939; flax, 546,000 tons in 1938.

The backbone of mechanization in Soviet agriculture is furnished by the machine and tractor stations, each of which serves collective farms within its area. These stations grew from 158 in 1930 to 6,350 in 1938. The number of tractors on farms increased from 66,332 in 1929 to an estimated 500,000 in 1940; the number of combines, from 45 in 1929 to 168,000 in 1940. Total income from labor and sales of the collective farms reached a peak of 19 billion rubles in 1939 and increased further in 1940.

Foreign Trade. Foreign commerce is a governmental monopoly exercised by the Commissariat of Foreign Trade which maintains trading agencies abroad. Imports and exports are regulated in accordance with the country's system of planned economy. In 1938, the last year for which trade figures were published, imports totaled 1,422,882,000 rubles and exports 1,331,927,000 rubles, nominally equivalent to \$261,757,000 and \$250,751,000, respectively, in U.S. currency. For preceding years' trade, see YEAR BOOK for 1940, p. 751. For United States trade with the Soviet Union in 1940 and 1941, see TRADE, FOREIGN.

Finance. In a country as highly socialized as the Soviet Union the growth of the budget reflects to a large extent the degree of economic progress. The first "firm" budget, that of 1924-25, balanced

SOVIET UNION BUDGET

[In millions of rubles]

Revenues	1940, actual (preliminary)	1941, proposed	Increase per cent
Turn-over tax	105,849	124,500	17.6
Deductions from profits	21,346	31,259	46.4
Social-insurance funds	9,153	9,998	9.2
Machine-tractor stations	2,007	2,603	29.7
State loans	11,397	13,230	16.1
Personal taxes and dues	9,443	12,451	31.9
Total revenues	178,080	216,161	21.4
Expenditures			
1. National economy	57,110	72,875	27.6
Industry	27,762	39,181	41.1
Agriculture	12,168	13,455	10.6
Transport and communications	4,664	6,576	41.0
2. Social-cultural measures	41,713	47,803	14.6
Education	22,682	26,612	17.3
Health protection	9,379	10,891	16.1
Social insurance	3,007	3,469	15.4
3. Commissariats for Defense and Navy	56,102	70,865	26.3
4. Judiciary and State Administration	6,752	7,142	5.8
5. Service on State loans	2,785	3,850	20.3
Total expenditures	173,259	215,373	24.3

at 1.4 billion rubles. Preliminary budget returns for 1940 and estimates for 1941 are shown in the table on page 669. The separate budgets of the Union republics in 1940 balanced at a total of 42,895,728,000 rubles.

National income of the U.S.S.R. for 1940 was reported at 125,500,000,000 stable rubles of 1928-27. The estimated total of Federal bond issues outstanding Aug. 1, 1940, was 39,800,000,000 rubles. The official exchange rate of the ruble, for foreign trade valuation purposes only, was 5.3 rubles equals \$1.00 (1 ruble equals \$0.1887).

Transportation. Railway mileage increased from 53,700 in 1937 to an estimated 62,000 miles on Jan. 1, 1941 (including lines in annexed territories). The Akolinsk-Kartaly line (527 miles), Volochaevka-Komsomolsk (236 miles), and three shorter lines were placed in operation during 1940. Freight turn-over in 1940 was 409,000,000,000 ton-kilometers. Highways extended 1,682,000 miles in 1940 (see **ROADS AND STREETS**). Some 65,826 miles of inland waterways are navigable. In 1940 they handled 36,000,000,000 ton-kilometers of freight. Two important new lines, Moscow-Irkutsk and Moscow to Alma-Ata, were added to the civil air network in 1940. The merchant marine on July 1, 1939, comprised 716 vessels of 1,315,766 gross tons.

Government. Under the Constitution of 1936 supreme political power is vested in the Supreme Soviet of the U.S.S.R., meeting twice a year, and elected for a period of four years by universal direct suffrage and with secret ballot. The Communist Party, however, is the only legal political party and all candidates for elective office must have its approval. The Supreme Soviet consists of two legislative chambers with equal rights. The two chambers in joint session elect a Presidium of the Supreme Soviet consisting in 1941 of 42 members (including a president, 16 vice-presidents, a secretary, and 24 others) with wide administrative powers between sessions of the Supreme Soviet, including ratification of treaties and declaration of a state of war. The Presidium supervises the work of the Council of the People's Commissars, selected by the Supreme Soviet, which acts as the executive and administrative organ of the State. Joseph Stalin, general secretary of the Russian Communist Party and member of the Presidium of the Supreme Soviet and of the Supreme Military Council, exercised dictatorial powers. He became Premier, or chairman of the All-Union Council of People's Commissars, in 1941 (see *History* below).

HISTORY

The Soviet Government's efforts to keep Russia neutral while the capitalist powers exhausted themselves through armed strife ended in failure in 1941. On the morning of June 22 the German armies, aided by Finnish, Rumanian, Hungarian, and Slovak forces, launched a surprise invasion of the Soviet Union along the entire western frontier from the Arctic to the Black Seas. The invasion presented the Red Army and the Communist political system with a supreme test. By the end of 1941, both the military and politico-economic organizations of Soviet Russia, despite tremendous losses and damage, had withstood the Axis onslaught far better than the outside world had anticipated. See **WORLD WAR** for a complete account of military developments.

Diplomatic Prelude. The Nazi-Communist death struggle that drenched the plains of Western Russia with the blood of millions was preceded during the first half of 1941 by an increasingly acute diplomatic and propaganda conflict, waged by both

sides behind a mask of mutual friendship. German-Soviet collaboration, initiated by the Hitler-Stalin pact of Aug. 23, 1939, first began to wear thin after Hitler's guarantee to Rumania in the summer of 1940 blocked further Soviet territorial expansion in the Balkans (see **YEAR BOOK** for 1940, p. 752 f.). After German troops entered Rumania, Moscow employed the Communist International and every device of diplomacy short of open opposition to block the further expansion of German influence in the Balkans. Berlin, on the other hand, covertly encouraged the Finns to stand out against persistent Soviet efforts at annexation. Since Stalin was not prepared openly to challenge Hitler's ambitions in these two areas of conflict, the latter emerged victorious in both the Balkans and in Finland. Having conquered the Balkans and reached an understanding with Finland, Hitler was then in a position to attack Russia without serious danger of outside interference except for British air attacks upon western Germany.

While the nonmilitary phase of the Russo-German struggle was in process in the Balkans and Finland, the two Governments and their efficient propaganda organizations continued to collaborate against the democracies in other parts of the world (see **COMMUNISM AND FASCISM**). Five new Nazi-Soviet accords were signed Jan. 10, 1941, including an economic treaty expanding the trade pacts of Aug. 23, 1939, and Feb. 11, 1940. An exchange of goods valued at over \$400,000,000 for the period ended Aug. 1, 1942, was provided for with Russia delivering raw materials, oil products, and foodstuffs in return for German industrial equipment. The other agreements fixed the new German-Russian frontier and settled problems arising from the Soviet occupation of the Baltic States and the transfer of their German-speaking inhabitants to German-controlled territories.

At the same time the Soviet Union assisted Germany to weaken the British economic blockade by concluding trade agreements or opening commercial negotiations with Finland, Sweden, Norway, Slovakia, Hungary, and Belgium. Until Bulgaria capitulated to German pressure (see **BULGARIA** under *History*), relations between Moscow and the Axis capitals seemed increasingly close, while Russian relations with London and Washington cooled noticeably. But with Bulgaria's adherence to the Axis and the entrance of German troops on March 2, Moscow displayed its chagrin by openly denouncing King Boris's action on March 3 as likely to lead to an extension of the war. In his negotiations with Bulgaria, Hitler had ignored the provision of the German-Russian nonaggression pact calling for consultation on matters of joint interest. Yet the Soviet Government made no direct protest to Berlin.

When German pressure was concentrated upon Yugoslavia, Moscow took bolder steps to indicate its alarm and opposition. On March 24, the day before the Cvetkovich Government in Belgrade adhered to the Axis, Russia exchanged pledges of nonaggression with Turkey. This freed Turkey of fear of a Russian attack in case it became involved in war with the Reich. Further Soviet-Turkish negotiations, which plainly irritated Berlin, ensued. On April 6, three hours before the German invasion of Yugoslavia began, a Soviet-Yugoslav pact of friendship and nonaggression was signed. During the Balkan hostilities the Soviet press openly showed sympathy for the Yugoslavs.

Communist organs in Sweden and other neutral countries began to denounce German policy openly for the first time since the conclusion of the Nazi-

Soviet pact of 1939. On April 12 the Soviet Government notified Hungary that the occupation of Yugoslav territory by Hungarian troops had "made a particularly bad impression" in Russia and could not receive Soviet approval. On April 29 Moscow banned shipments of war material across the Soviet Union, thus cutting off German war supplies to Japan. Shortly afterward the Soviet Government formally denied foreign reports of Russian troop movements to the western frontier.

That the Russians were not ready for a showdown with Hitler was indicated on May 9 when Moscow withdrew recognition of the Yugoslav, Belgian, and Norwegian Governments-in-Exile, all of which were allied with Britain. Moreover on May 16 Moscow extended diplomatic recognition to the pro-Axis regime of Premier Rashid Ali Al-Gailani in Iraq, which was then involved in hostilities with Britain. In Allied capitals, this move aroused fear of a Nazi-Soviet agreement dividing all of Asia Minor into German and Russian spheres of influence.

Following the German occupation of Crete, it was generally expected that Hitler would strike through Syria at the Iraq oil fields and the Suez Canal. But early in June a large-scale transfer of German forces from the Balkans to the Russian frontier was reported. More German troops landed in Finland (q.v.) and Berlin was reported to be pressing Moscow for the right to place German technicians in charge of food and oil production in the U.S.S.R.

Berlin maintained a studied silence on German-Soviet relations while the official Soviet news agency, Tass, on June 13 ridiculed foreign forecasts of the coming Russo-German war as the "clumsily concocted propaganda of forces hostile to the U.S.S.R. and to Germany and interested in further extension and unleashing of war." Tass declared that "it should be assumed" that German troop movements had no bearing on Soviet-German relations; that the Reich had made no demands upon Russia; and that "according to information at the disposal" of Moscow, Germany "abides by the provisions of the Soviet-German pact of nonaggression as unswervingly as the Soviet Union." The agency described the annual maneuvers of Red Army reservists along the western frontiers as for training purposes and in no way inimical to Germany. Nine days later the German invasion of Russia began.

Russian Resistance. The powerful drive of the Germans and their allies quickly overran all of the border territories annexed by Russia from Poland, the Baltic States, Finland, and Rumania during 1939 and 1940. The Russian aggressions of the preceding two years proved a boomerang, as they contributed directly to the entry of Finland and Rumania into the struggle on the Nazi side. Revolts of nationalist and anti-Communist elements in Estonia, Latvia, and Lithuania assisted the German drive (see each country under *History*).

But once on Russian territories, the invaders met unyielding resistance from the civilian as well as the military population. The Russian scorched earth policy left cities, villages, and fields in ruins before their occupation by the advancing Axis forces. There was no sign of the expected internal revolt against Stalin's leadership. Despite the tremendous loss of men, war material, and economic resources (see *WORLD WAR*), the morale of the Russian people at the end of 1941 appeared unshaken. Meanwhile Soviet propaganda was employed with considerable effect to weaken the morale of the opposing troops and to stimulate revolt against the Reich throughout German-occupied

Europe. Russia's fighting resistance, the final stemming of the German onslaught, and the Soviet counter-offensive in December had great influence in encouraging the subject peoples of Europe to continue their struggle against German overlordship (see *GERMANY* under *History*). The technical efficiency and discipline of the Red Army likewise served to enhance the prestige of the Russian Communist regime throughout the world.

Alliance with Britain. Another result of the German attack upon Russia was to force Moscow into close military and political collaboration with Great Britain, the United States, and the other democratic powers. Stalin's "independent" foreign policy during the years preceding the German attack had been markedly inimical to British interests. Early in 1941 British spokesmen repeatedly complained that Russia was supplying Germany with war materials, partly through trade with the United States.

Nevertheless the Churchill Government flatly rejected Hitler's bid for Britain's neutrality or active support in his war against the Soviet Union. Instead Churchill on June 22 offered full British aid to Russia. This initiative led to the conclusion of the Anglo-Soviet mutual assistance pact of July 12, joint Anglo-Soviet occupation of Iran in August-September, the Anglo-American-Russian conference in Moscow in October, and the large-scale delivery of British and American arms to Russia. Anglo-Soviet collaboration was extended into the economic and diplomatic field but without removing all evidences of mutual distrust and antagonism between the two powers (see *GREAT BRITAIN* under *History*).

Aid from United States. Russian relations with the United States during the year closely followed the course of Anglo-Soviet relations. While striving to prevent closer Russian cooperation with Germany and Japan, Washington during the first half of the year curtailed exports to the Soviet Union in response to British complaints that this trade was aiding Germany. A marked coolness developed between Moscow and Washington, particularly after the U.S. Government early in May stopped exports to Russia of all machinery and equipment capable of being utilized in defense production. Russian-American trade came to a virtual standstill early in June and experts attached to the Soviet buying and selling agency in the United States were shifted to South America. Some \$40,000,000 of Soviet credits in the United States were frozen on June 14.

This situation changed almost overnight upon the outbreak of German-Soviet hostilities. President Roosevelt on June 24 announced that all possible aid would be extended to the Soviet Union. The frozen credits were released. Roosevelt's announcement of June 25 that the U.S. neutrality statute would not be applied against the Soviet Union made possible immediate shipments of arms, oil, and other war materials from U.S. ports to Vladivostok and Archangel. Two high Soviet military officials arrived in Washington July 26 to expedite shipments of supplies to Russia.

On July 30 Roosevelt's emissary, Harry L. Hopkins, arrived in Moscow to discuss supply problems. The U.S. Government on August 4 made a formal commitment to send arms and supplies to Russia, if possible in American ships. On August 15 the U.S. Treasury advanced Russia \$10,000,000 against future deliveries of Soviet gold. Early in September a mission of Russian airmen flew to Washington from Moscow via Alaska to speed up war shipments from the United States. It was announced September 17 that the U.S. Defense Supplies Corporation had contracted with the Soviet-controlled

Amtorg Trading Corporation for the purchase of \$100,000,000 worth of manganese, chromite, asbestos, and platinum from Russia. Of this sum \$50,000,000 was advanced to the U.S.S.R. before receipt of the materials.

As a result of the three-power conferences held in Moscow September 29–October 2, the American and British representatives agreed "to place at the disposal of the Soviet Government practically every requirement for which the Soviet military and civil authorities have asked." Washington extended the Soviet Government another \$30,000,000 credit against Russian gold deliveries on October 20. On October 30 it announced that Russia was being given priority over the U.S. Army with respect to American combat planes and related war materials. That same day President Roosevelt in a letter to Premier Stalin promised Russia lease-lend aid to the value of \$1,000,000,000. This loan was to be repaid without interest over a 10-year period beginning five years after termination of the war.

There followed on November 6 the appointment of Maxim Litvinov as Soviet Ambassador to the United States, replacing Constantine A. Oumansky. Shortly after his arrival in Washington in December, Litvinov announced the rejection by Moscow of Anglo-American requests for Russian aid in the war against Japan. He said the Soviet Union could make its greatest contribution to the defeat of the Axis powers by concentrating on Hitlerite Germany. It was reported that Moscow had received and rejected a German offer of a separate peace immediately after Japan entered the struggle.

Relations with Japan. Japanese efforts to secure an agreement with the Soviet Union that would free Tokyo's hands for an attack upon French, British, and American possessions in southeastern Asia finally succeeded in 1941 after lengthy negotiations (see YEAR BOOK for 1940, p. 382). On April 13 Foreign Ministers Molotov and Matsuoka signed a nonaggression pact in Moscow recognizing existing Japanese-Soviet frontiers in northeastern Asia and agreeing to remain neutral in the event that either power became involved in war with third powers. The pact reduced the danger that Japan would join Germany in a simultaneous attack upon Russia. *Pravda*, organ of the Russian Communist party, hailed the agreement as a "bewildering blow" to Anglo-American plans for drawing Russia into war with Germany or Japan.

Immediately after the conclusion of the pact with Japan, large-scale transfers of Russian troops from Siberia to western Europe were reported. Another report indicated that these troops were transferred not to Europe but to the new Trans-Northern Siberian Railway from Lake Baikal to Komsomolsk. Less vulnerable than the original Trans-Siberian line to attack by the Japanese, this new railway with its garrison points and industrial centers was reportedly converted into the main Siberian defense base. After the German invasion began, Moscow showed strong apprehension of a Japanese drive into Siberia. Russian naval forces in the Far East were strengthened despite the strain of the German-Soviet War. In November the Soviet official spokesman reaffirmed the Soviet-Japanese neutrality pact, and it was invoked by Moscow after December 7 as a reason for Russia's refusal to join Britain and the United States in resisting Japanese aggression.

Other Foreign Relations. Russia's relations with all of the other anti-German powers underwent a marked change after the German attack began. The unofficial state of war between Russia and the Polish Government-in-Exile was terminated. Diplo-

matic relations were established with the Polish, Belgian, Czechoslovak, Greek, and Norwegian Governments-in-Exile, all of them allies of Great Britain. This was followed by the conclusion of Russian military accords with the Czechoslovak and Polish Governments-in-Exile under which Polish and Czechoslovak forces were raised in Russia for service as independent armies under Russian ultimate command (see POLAND and CZECHOSLOVAKIA under *History*). Through British and American mediation, an unsuccessful effort was made to conclude peace with Finland (q.v.) on the basis of the pre-1939 Finnish-Soviet frontiers.

In August the Soviet regime also revived the Pan-Slav movement of Czarist Russia in order to promote the unity of all the Slav peoples in resisting German domination. On August 10 the novelist Alexei Tolstoy addressed a meeting in Moscow attended by Poles, Czechs, Serbs, Croats, Slovenes, Macedonians, and Montenegrim, calling upon them to unite with Russia for the final destruction of German fascism.

Anti-Religious Attitude Modified. Another move by the Soviet Government to win foreign and possibly domestic support against the invader was to raise the cry of "anti-Christ" against Hitler and his regime, while curtailing the anti-religious propaganda that had been encouraged in Russia since the Bolshevik revolution. On October 3 President Roosevelt revealed that he had raised the question of greater religious freedom in Russia in connection with Russian-American negotiations on war supplies. The following day the official spokesman in Moscow reaffirmed Soviet freedom under the 1936 constitution to believe and practice any and all religions as well as to carry on anti-religious activities and propaganda. About the same time the Soviet Government suspended the publications of the League of Militant Atheists. On June 29 the Primate of the All-Russian Orthodox Church and Metropolitan of Moscow threw his influence behind the Government's war effort, asserting that his church had decided to forget the past.

Internal Developments. Internal politics in 1941 were marked by the emergence of Joseph Stalin as the official head as well as the unofficial dictator of the Soviet Union. During the first half of the year, there was also an extensive reorganizing and strengthening of the Government and all departments of the national economy in anticipation of an international crisis.

A Georgian, Lorenti Beria, was advanced from the post of Commissar of Domestic Affairs to that of Commissar of State Security on January 31. In mid-February the first national conference of the Russian Communist party since 1939 convened in Moscow. It was featured by attacks upon lag-gard industries and ineffective workmen and managers. Sweeping reforms in industry were demanded to speed up production, particularly in armaments. The conference expelled Maxim Litvinov, the former Foreign Commissar, from the Central Committee of the Communist party for alleged "inability to discharge obligations." He was replaced by V. G. Dekanozov, Soviet Ambassador to Berlin. This change was part of a drastic shake-up of the Central Committee in which 19 of the 72 members were dropped. At the same time many heads of Government departments and industries were threatened with dismissal unless their respective departments showed improved efficiency.

Fourteen hundred delegates, including 117 from newly annexed Finnish, Estonian, Latvian, Lithuanian, and Rumanian territories, met in Moscow

February 24 for the eighth session of the Supreme Soviet. They approved a budget for 1941 of some 216 billion rubles as compared with 179 billions in 1940. Total national income in 1941 was estimated at 222.4 billion rubles. Defense appropriations increased from 57 billions in 1940 to 70.9 billions. To meet steadily growing defense costs, the income tax rate for peasants was raised from 3 to 4 per cent of gross income to between 4 and 8 per cent.

Defense Preparations. At the meetings of both the Communist party conference and the Supreme Soviet, speakers stressed the necessity for strengthened defenses despite frequent references to Stalin's "wise foreign policy" that had kept the Soviet Union "outside the second imperialist war." Under the compulsory labor decree of 1940, the Government on February 5 called out 46,000 more boys of 17 years of age to learn the timber and building material trades. This brought to 800,000 the number of youths to be trained for labor service in armament and other industries in 1941. Meanwhile there had been extensive shake-ups in the military command. Gen. G. K. Zhukov, who had distinguished himself in fighting the Japanese in Outer Mongolia in 1938, was appointed Vice Commissar of Defense and Chief of the General Staff of the Red Army on February 12. In a message to the Red Army on its 23rd anniversary, February 23, Zhukov declared that "shortcomings and defects" in the armed forces had been remedied by the 1940 reorganization which curtailed the powers of political commissars and gave military commanders undisputed authority.

On March 6 the Presidium of the Supreme Soviet removed I. P. Sergeev, Commissar for Munitions, for inefficiency and appointed P. N. Goremkin, former Vice Commissar of the armament industry, in his place. The extent of Soviet military preparations was screened by an impenetrable censorship and anti-espionage system. On May 17 even foreign diplomats accredited to Moscow were forbidden to travel in border zones and key centers without official authorization. As a result of the Red Army's secrecy, the German army and the world at large were surprised by the extent and quality of Russian military equipment when the Russo-German conflict began. The destruction of the Russian forces had appeared to Hitler and his commanders as an easy six weeks' task for the formidable German army and air force. But five months of terrific struggle found the Red Army still largely intact and capable of launching a powerful counteroffensive against the invaders. In anticipation of a long war of attrition, the Russians on October 1 initiated compulsory military training for all men between the ages of 16 and 50.

Stalin Becomes Premier. The intensification of the international crisis as it affected the Soviet Union was reflected in the assumption of the Premiership by Joseph Stalin on May 6. The former Premier, Vyacheslav Molotov, retained the post of Foreign Commissar and was appointed Vice Premier, or vice chairman of the Council of People's Commissars. Stalin thus became official as well as actual head of both the Soviet Government and the Russian Communist party, the positions held by Lenin previous to his death in 1924.

War Measures. The German invasion brought further important political changes and even greater concentration of power in Stalin's hands. On June 22 martial law was proclaimed in all the western border areas of the Soviet Union from the Arctic to the Black Sea. The same day Vice Premier Molotov, in a broadcast to the Union, de-

nounced the German attack as "perfidy unparalleled in the history of civilized nations." Declaring that the war "has been forced upon us, not by the German people . . . but by the clique of blood-thirsty Fascist rulers of Germany who have enslaved Frenchmen, Czechs, Poles, Serbians, Norway, Belgium, Denmark, Holland, Greece and other nations," he predicted the invaders would meet a fate similar to that of Napoleon.

The Soviet mobilization and war precautions were reported to have proceeded smoothly and with unexpected efficiency. All industries and offices were placed on an overtime basis June 26. Sale of alcoholic drinks was prohibited in Moscow. Strict measures were taken to deal with fifth columnists, spies, and enemy parachutists. On July 1 the Presidium of the Supreme Soviet, the Central Committee of the Communist party, and the Council of People's Commissariats announced their decision to concentrate all power in the hands of a Committee for State Defense, headed by Stalin as chairman and Molotov as vice chairman. The other members were Marshal Klementy E. Voroshilov, chairman of the Defense Council; L. P. Beria, Commissar for State Security; and Georgi M. Malenkov, secretary general of the Communist party's Central Committee. In Leningrad at the same time Soviet authorities conscripted all men between 16 and 50 and women between 16 and 45 for labor service on defense works.

Stalin made one of his rare radio broadcasts to the Soviet peoples on July 3. He said the German armies were continuing to press forward and that "a grave danger hangs over our country." Declaring that a German victory would mean restoration of the great landed estates of Czarist days and enslavement by "German princes and barons," he called for a scorched earth policy to deprive the invaders of food and shelter, the ruthless extermination of defeatists, saboteurs, and spies, for a revitalized munitions and factory output, and for better transport organization. His instructions were carried out. On July 12 Stalin divided the military command among Marshals Voroshilov, Budenny, and Timoshenko.

As the German armies advanced upon Moscow, most of the Soviet Government services were moved in mid-July to Kazan, 450 miles to the east. However Stalin and his key associates remained in the capital. Rationing of foodstuffs and manufactured goods was introduced in Moscow July 16. Bread cards were issued for the third time in the Soviet Union's history. Dual control of army units by officers and political commissars, the latter representing the Communist party, was restored on July 17 after having been abolished in August, 1940. The political commissars were directed to seek out "cowards, panic-mongers, and deserters" and to report unworthy officers directly to the Red Army High Command. This move suggested the spread of some instability and suspicion behind the Russian lines.

Stalin continued the centralization of power in his own hands on July 20 by taking over the post of Defense Commissar from Marshal Timoshenko and assuming direct control over a reorganized Commissariat for Internal Security. He appointed seven new Vice Commissars of Defense to serve under him, thus increasing the number of such commissars to 14. A ruthless guerrilla warfare was organized behind the German lines that effectively harassed and delayed their advance.

Dnieper Dam Destroyed. In line with Stalin's scorched earth policy, the retreating Russians about August 20 blew up the great Dnieper Dam,

one of the proudest engineering achievements of the Soviet regime and important both to the navigation system on the Dnieper River and as the chief source of power for the industries of the Ukraine. The German threat to Leningrad led to the establishment in that city on September 3 of a Supreme Military Soviet of six men to "mobilize all available forces for the defense of the city." On September 8 the Soviet Supreme Council in Moscow announced its decision to resettle in Siberia some 400,000 peasants of German origin inhabiting the Volga German Republic to avert the danger of possible fifth column activities among them. A decree of September 24 formally abolished the German Volga Republic, which formed an administrative unit of the Russian Soviet Socialist Republic.

Capital Moved. When the German drive on Moscow appeared stalled, the Soviet Government services and foreign diplomatic staffs that had moved to Kazan returned to the capital. However the Nazi offensive was resumed with increased fury in October. As Hitler's armies approached to within 60 miles of Moscow, a state of siege was proclaimed there and in adjoining districts on October 20. At the same time Stalin issued a special order calling for a fight to the finish to save the capital. As in Leningrad, the citizens and soldiers rallied for a last-ditch defense of Moscow which proved successful. Meanwhile a temporary seat of Government was established on October 16 at Kuibyshev (Samara), the easternmost point on the Volga River. The foreign diplomatic staffs and most of the government services were transferred there, but Stalin again remained in Moscow to direct the war effort.

Stalin Rallies Nation. At the height of the German offensive, Stalin seized the opportunity presented by the 24th anniversary of the Bolshevik Revolution to deliver two fighting speeches (November 6 and 7) rallying the peoples of the Soviet Union to a war of annihilation against Germany. He asserted the Soviet Union was united with Britain and America in a "war of liberation" against Hitler, admitted "temporary military reverses" by the Red Army, and called upon Britain to open a second front in Western Europe to relieve pressure on the Russian forces. He placed Soviet casualties at 1,748,000 against German losses of 4,500,000.

In his second speech, he declared the invaders were "straining their last forces" and facing disaster. "Another few months, another half-year, one year, maybe, and Hitlerite Germany must burst under the weight of her own crimes." The Soviet Union's position, Stalin said, was not as bad as in 1918 when the "foreign interventionists" were defeated. He predicted that winter weather, the weight of Soviet resources, an accelerated output of munitions, discontent in occupied Europe and Germany, and aid from Britain and the United States would spell eventual defeat for Russia's enemies.

Under Stalin's firm leadership, the Russians withstood the German attacks unflinchingly while speeding the production of more war materials and the training of great new armies in preparation for a long war. Many of the key war factories and plants were removed from the Moscow area and other vulnerable regions to the east. At the end of November the German advance was halted short of Moscow and Leningrad and in December Russian counterattacks reversed the tide of the great conflict, at least for the rest of the winter.

The importance attached to the Soviet Govern-

ment's new ties with the democratic powers was indicated by the restoration of Maxim Litvinov to something of his former prestige and power. His appointment as Ambassador to Washington on November 7 was followed by his elevation to the post of Deputy Commissar for Foreign Affairs on November 11. On December 6 it was announced that elections to the Supreme Soviet, due to be held that month, had been postponed by decree of the Presidium due to the war crisis.

German Rule in Russia. The great expanse of western Russia occupied by the German and allied armies up to the end of 1941 was placed under a "Reich Minister for the East" and divided into two regions—"Ostland," including the Baltic States and the former White Russian Soviet Republic, and "Ukraine," comprising all the remaining occupied districts to the south. Dr. Alfred Rosenberg, chief Nazi party ideologist, was appointed Reich Minister for the East. "Ostland" and "Ukraine" were entrusted to the administration of Heinrich Lohse, former Governor of Schleswig-Holstein, and Erich Koch, former Governor of East Prussia, respectively.

"Ostland" and "Ukraine" were subdivided into administrative regions along the lines of former national or regional boundaries (see ESTONIA, LATVIA, and LITHUANIA under *History*). To the bitter disappointment of Ukrainian nationalists, who had hoped for an independent or autonomous Ukrainian republic under German protection, Eastern Galicia was incorporated in the Government-General of Poland while Odessa and its hinterland were allotted to Rumania.

The German program for the agricultural exploitation of the newly conquered Russian territories was set forth in Berlin on August 31. It was asserted that the restoration of the large landed estates would under no circumstances be tolerated. The Soviet collective farms were to be continued in operation under managers selected from the "more expert and diligent peasants." The Russian peasants were to retain their homes and small individual plots of land as under Soviet rule, but those fulfilling the production quotas set by German authorities would be rewarded by additional allotments of land. The German occupation authorities, the announcement stated, would fix prices for farm products at a higher level than those paid by the Soviet Government.

A labor shortage and the uncooperative attitude of peasants and workers left behind the German lines proved an immediate obstacle to the resumption of normal agricultural activities. Soviet guerrillas harassed and intimidated those persons in the occupied areas disposed to cooperate with the German authorities. The Germans early introduced compulsory labor service. In the occupied areas of White Russia, the Nazi Governor conscripted boys from 14 to 20 years of age and girls from 17 to 24 years of age for labor in the fields. Arrangements were made to resettle peasants from Slovakia, Italy, and Rumania in parts of the fertile Ukraine to plant and harvest the crops in 1942. But the Russian scorched earth policy and the continued active and passive resistance of the natives prevented the Germans from reaping the expected economic benefits from their conquest.

See also AFGHANISTAN, BELGIUM, BULGARIA, CHINA, DENMARK, FINLAND, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, IRAQ, JAPAN, NETHERLANDS, RUMANIA, SLOVAKIA, SPAIN, SWEDEN, TURKEY, and YUGOSLAVIA, under *History*; ANTHROPOLOGY; ARCHITECTURE; COMMUNISM; DAMS; LABOR CONDITIONS under *Employment*; LEND-LEASE AD-

MINISTRATION; MUSIC; NAVAL PROGRESS; REFUGEES; UNITED STATES under *Foreign Affairs*; WATERWAYS, INLAND.

UNIONS. See LABOR CONDITIONS under *Union Movements*.

UNITARIANS. A religious denomination, founded in England in the late 18th century, which holds belief in one God in one person as opposed to the Trinity. Headquarters, 25 Beacon Street, Boston, Mass. For statistics, see RELIGIOUS ORGANIZATIONS.

UNITED BRETHREN. A term used for three religious denominations in the United States, all originating in the evangelistic movement of William Otterbein and Martin Boehm about 1800. The largest body is the Church of the United Brethren in Christ with headquarters in Dayton, Ohio. See RELIGIOUS ORGANIZATIONS.

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND. See GREAT BRITAIN; IRELAND, NORTHERN.

UNITED STATES. The area of the United States proper, or the 48 States and the District of Columbia, is 3,022,387 square miles; this excludes inland waters having an area of 45,259 square miles. The noncontiguous lands subject to the authority of the United States (Alaska, Hawaii, the Philippine Islands—autonomous but not yet independent, the Panama Canal Zone, Puerto Rico, Guam, the Virgin Islands, and American Samoa) comprise 711,606 square miles.

AREA AND POPULATION OF UNITED STATES, ITS TERRITORIES AND INSULAR POSSESSIONS

Political division	Area sq miles	Population (1940 census)	Capital
United States	3,026,789	131,669,275	Washington
Alaska*	586,400	72,524 ^d	Juneau
Hawaii*	6,407	423,330	Honolulu
Puerto Rico	3,435	1,869,255	San Juan
Philippine Isls. ^b	114,400	16,356,000	Manila
Guam	206	22,290	Agana
Samoa, American	76	12,908	Pago Pago
Panama Canal Zone*	549	51,827	Balboa
Virgin Islands	133	24,889	Charlotte Amalie
Totals	3,738,395	150,502,298 ^e	

* Territory. ^b Self-governing commonwealth. ^c Leased from the Republic of Panama in perpetuity. ^d Census taken Oct 1, 1939. ^e Estimate derived by extrapolation from the census figures for 1918 and 1939. ^f Office of the Governor. ^g Exclusive of military and naval services, etc., abroad (118,933).

Note. The United States also possesses, or claims possession of, the following Pacific islands: Baker, Howland, and Jarvis Islands, fringing the equator in mid-Pacific about 1,000 miles S S W of Honolulu (U.S. aerologic stations were established on all three islands in 1936 and an emergency airfield on Howland Island in 1937); Johnston Island (q v), Midway Islands (q v), Palmyra Islands (q v), and Wake Island (q v). Canton Island (q v.) and Enderbury Island are under joint Anglo-American administration.

The population of the United States (Sixteenth Census) April, 1940: 131,669,275. (For populations of individual States, see articles on the several States, Territories, and Possessions.) The racial composition of the population was as follows: There were 118,214,870 whites of whom 106,795,732 were native and 11,419,138 foreign born; 12,865,518 Negroes; and 588,887 persons of other races. The last-named category included 333,969 Indians, 77,504 Chinese, 126,947 Japanese, 45,563 Filipinos, 2,405 Hindus, and 1,711 Koreans. See also the articles on ENEMY ALIENS and IMMIGRATION.

Agriculture. See AGRICULTURE; AGRICULTURE, U.S. DEPARTMENT OF; articles on crops, etc.

Commerce. See BUSINESS REVIEW; TRADE, FOREIGN.

Communications. See POST OFFICE; RADIO; TELEGRAPHY; TELEPHONY.

Defense. See the articles listed under NATIONAL DEFENSE, especially MILITARY PROGRESS, NATIONAL DEFENSE AND WAR AGENCIES, NAVAL PROGRESS, and WORLD WAR.

Education. See EDUCATION; SCHOOLS; UNIVERSITIES AND COLLEGES; and the section on *Education* in the articles on the States.

Finance. See PUBLIC FINANCE; TAXATION; and below under *Legislation*.

Judiciary. See LAW.

Manufacturing. See BUSINESS REVIEW; the section on *Manufacturing* in the articles on the States; articles on leading products.

Mineral Production. See the section on *Mineral Production* under BUSINESS REVIEW and in the articles on the States; MINES, BUREAU OF; articles on leading minerals.

States and Territories. See the separate article on each.

Transportation. See AERONAUTICS; RAILWAYS; ROADS AND STREETS; SHIPPING.

ADMINISTRATION

Unity. After months of uncertainty, late in 1941 the United States marched to war under the leadership of President Franklin D. Roosevelt. Not since the dark depression days of 1933 had the country been so firmly united behind him as it was in support of the energetic steps which followed the Japanese attack and the declarations of war by Germany and Italy. The once isolationist *Chicago Tribune* and *New York Daily News* ceased all recriminations and pledged their support. The leaders of the America First Committee expressed their readiness to fight through to victory under the leadership of President Roosevelt. Joseph W. Martin, Republican leader, called a political truce for the duration of the conflict. Westbrook Pegler, once a consistent critic of the administration, declared that isolationists should thank their lucky stars that Mr. Roosevelt was President. "A better fighter to conduct the war could not be found."

What opposition still existed after the Japanese attack of December 7 came from the extreme left and the extreme right. A few Socialists and the members of the Fourth International boldly proclaimed the conflict "imperialist" in character and asserted that denunciations of fascism served merely to obscure more basic economic conflicts between the contending powers. The press of the Christian Front attacked the policies of President Roosevelt, ignored Japanese aggressions, and placed the blame for the war squarely on the Administration. Other native fascists, like the "Silver Shirts," while sharing this view, nevertheless quietly suspended their activities. (See COMMUNISM; FASCISM.)

The treacherous Japanese attack at Pearl Harbor had served American patriotism well. The Axis Powers had the advantage of striking a heavy surprise blow. But it was at once plain to the most reluctant citizen that our involvement in the conflict was caused not by any machinations of British capitalists, Jewish internationalists, or Russian Communists, but by a forthright act of aggression against the United States. For the American people, the issue could not be confused.

The President. Franklin Delano Roosevelt on January 20 assumed the Presidency of the United States for the third time. Eight years earlier he had taken office in the midst of a grave national crisis brought on by economic depression. Fear of impending disaster had united all elements of the population behind him on Mar. 4, 1933. Then came

the New Deal with its measures of social relief, of economic planning, and of reform. Within a brief period, the spell which confusion and fear had woven over all parties and interests was broken. Many conservative groups came to regard the New Deal with hatred, while the President, as avowed champion of the underprivileged, declared in the 1936 campaign that he had just begun to fight for his program of reform and readjustment.

By January of 1941, many of the hard fought domestic issues had been obscured by the international crisis and the growing menace of the aggressive Axis states. But they were not forgotten. Early in the year, Roosevelt called the attention of Congress to the continuing unemployment and relief problem, while later he pledged that his program of social reform would not be scrapped. But the fascist threat called for a new type of leadership, striving to rally all sections, all faiths, and all economic elements behind the government. It became plain that the President was striving to achieve the highest possible unity of capital and labor under the twin banners of democracy and resistance to fascism. In his Labor Day speech, he said to worker and employer: "The right of freedom of worship would mean nothing without freedom of speech. And the rights of free labor as we know them today could not survive without the rights of free enterprise. That is the indestructible bond that is between us—all of us Americans: interdependence of interests, privileges, opportunities, interdependence of rights. That is what unites us—men and women of all sections, of all races, of all faiths, of all occupations, of all political beliefs. That is why we have been able to defy and frustrate the enemies who believed they could divide and conquer us from within."

The proclamation of a limited national emergency shortly after the outbreak of the war in Europe, and of an unlimited national emergency on May 27, 1941, served to concentrate vast powers in the hands of the Chief Executive. The President's normal constitutional authority is highly elastic; and the statutes dealing with an "unlimited emergency" enabled him to perform important additional functions. The creation of the various defense agencies within the Executive Office of the Presidency made it possible for him to control much of the national effort simply by issuing orders to their heads, or prescribing regulations for their work. (See NATIONAL DEFENSE AND WAR AGENCIES.)

During the year, Congress voted Roosevelt authority to lend, lease, sell, or give American supplies to any Power whose defense was vital to the safety of the United States, to arm American merchant vessels and permit their entry into the combat zone, to increase the public debt to \$65,000,000,000, and finally to use American military and naval forces in any part of the world. He was given an unprecedented amount of money to spend.

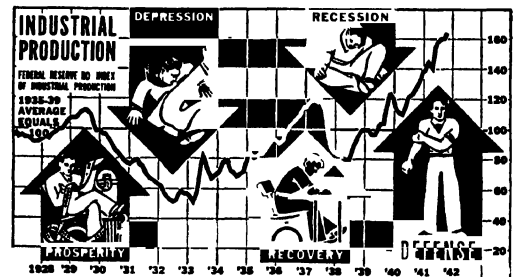
Foreign Affairs. At the beginning of the year, the President had to fight every inch of the way for a policy which time and events very rapidly vindicated. On the night of Dec. 29, 1940, he told an estimated 100,000,000 radio-listeners of the trials which lay ahead. He declared that he would give no encouragement to peace overtures until the aggressor nations showed a clear intention to abandon all thought of dominating the world; he asserted that the United States urgently needed more ships, planes, and guns. He warned the Axis that no dictator could weaken the American determination to aid Britain. To foreign critics of our neutrality policies, he said that it was no more unneu-

tral for us to send weapons to Britain than it was for Sweden and Russia to send war materials to Germany. He disavowed any intention of sending an expeditionary force beyond our borders.

The speech was heard by a divided nation. The chairman of the Committee to Defend America by Aiding the Allies, William Allen White, commented that he was in that organization for the purpose of keeping America out of war. This did not satisfy the policy committee, which emphatically endorsed the President's address. The No Foreign War Committee, headed by Verne Marshall, demanded that the President repeat his campaign promises against American involvement. Sens. Millard Tydings, Rush Holt, A. H. Vandenberg, and Burton K. Wheeler declared that the President should bring the warring nations of Europe together to work out a just peace. What they meant by a just peace was explained by Wheeler in a nation-wide broadcast. Germany was to be given her 1914 boundaries, while her colonial empire was to be returned to her. France, the Netherlands, Belgium, Norway, and Denmark would be restored as independent states, while Poland and Czechoslovakia would be given autonomy. But newspaper utterances and careful polls demonstrated that an overwhelming majority of Americans supported the policy of aiding Britain even if it meant risk of war.

The President was in no way daunted by the storm which broke around his head. In a determined and eloquent message of nearly four thousand words to the incoming 77th Congress, he reasserted the challenge of America to the Axis dictators, and asked for full means to defend democracy. He warned appeasers that no realistic American could expect from a victorious dictator international generosity, or a grant of true independence to conquered nations, or world disarmament, or freedom of expression, or freedom of religion, or even good business. He linked American security from invasion to the ability of the British navy to retain its predominant position. He saw a major menace in the activity of fifth columnists in Latin America. To the American people he said that while there was need for general sacrifice in speeding up production, his social program would not be jettisoned in the interests of preparedness. To the peoples of other continents he proclaimed that the United States looked forward to a world founded upon four essential freedoms: freedom of speech and worship, freedom from want and fear

Some idea of the vast extent of the defense measures contemplated by Roosevelt was given in the budget message which he submitted to Congress on January 8. This budget called for appropriations of \$17,485,529,049, of which \$10,811,000,000 were to be used for defense, and \$6,674,528,049 for other governmental activities. This was exclusive of the cost of furnishing aid to Britain. The President esti-



OEM Chart by Grant

DEFENSE NEEDS ALTER THE NATIONAL PICTURE

mated the revenues at \$8,275,435,000, and the deficit at \$9,310,093,049. The public debt, which already was approaching \$45,000,000,000, would rise to more than \$49,000,000,000 by July 1, 1942. Nondefense costs would have to be cut; and agencies in charge of social security, public works, and relief were asked to get along with decreased appropriations. The President called for new taxes, though he gave no details as to their character.

What President Roosevelt meant when he promised aid to the democracies became evident early in January when Rep. John W. McCormack of Massachusetts introduced the lend-lease bill, H.R. 1776. Once more the foreign policy of the President was severely attacked. Charles A. Lindbergh, spokesman for the America First Committee, told a Senate Committee that he hoped neither Britain nor Germany would win, that America was in no real danger of invasion, and that the destruction of the British Navy would not affect the United States. Testimony in much the same vein was given by Hugh Johnson, Norman Thomas, Hanford MacNider, William R. Castle, and others. Congressional dissidents cited as grounds for opposing the legislation the tremendous powers the bill gave President Roosevelt. The administration countered with an opinion of Supreme Court Justice Sutherland, rendered in 1936, that the power of the President to conduct the foreign policy of the nation was exclusive and plenary. Public sentiment was manifestly behind President Roosevelt, and after protracted debate his will prevailed. The bill was passed in much its original form (in the House 317-171, in the Senate 60-31) and signed on March 11.

Four days later, while the British, Chinese, and Greeks were holding the front line of democracy, President Roosevelt spoke to the country upon the urgent need for sacrifice and longer working hours. The determination of America, he said, must not and would not be obstructed by war profiteering, by shortsighted management, or by unnecessary strikes. The dictators of Japan, Germany, and Italy were solemnly denounced, the Turks and Yugoslavs were given encouraging words; the inhabitants of occupied areas were offered sympathy, and promised an opportunity to strike back. Perhaps most important of all were his words to the compromisers: "This decision is the end of any attempts at appeasement in our land, the end of urging us to get along with the dictators."

On March 12, asserting that "this nation has felt that it was imperative to the security of America that we encourage the democracies' heroic resistance," President Roosevelt sent Congress a request for a \$7,000,000,000 appropriation "to accomplish these objectives." Then, striking swiftly on the diplomatic front, Roosevelt chose the moment when headlines were attesting the reluctance of Yugoslavia and Turkey to yield to the Nazis, to tell reporters that either nation would qualify automatically for weapons from America, if it elected to fight the Axis. Previously, he had declared that China and Latin America were also eligible. By September, lend-lease aid had been extended to the forces of China, Holland, Norway, Russia, Greece, and Czechoslovakia.

Supplementing various appropriations for the administration of the lease-lend act, on July 22 the Reconstruction Finance Corporation (q.v.), with President Roosevelt's approval, authorized a loan of \$425,000,000 to Great Britain. This was to be used to pay for raw materials contracted for in the United States before the lend-lease act was passed, and was to be available at the rate of approximate-

ly \$100,000,000 a month. Collateral was provided mainly by British-owned American securities and the capital stock of British-owned United States insurance companies, valued at more than \$500,000,000. The British were thus furnished dollar exchange without having to dispose of their securities at forced sale.

With aid to the nations resisting the Axis on its way, President Roosevelt advanced the American outposts in the Atlantic by negotiating with the Danish minister at Washington for defense rights in Greenland. An arrangement was concluded on April 10. The next day, Roosevelt by Executive Order removed the area at the entrance of the Red Sea from the combat zone which the Neutrality Act prohibited United States ships from entering. Then, on April 29, Roosevelt announced that American vessels were not barred from the combat zone when the exigencies of hemisphere defense required their presence in the banned area. Finally, in the second week in July, Roosevelt as Commander-in-Chief moved the United States squarely into the Battle of the Atlantic by landing naval forces at Reykjavik, Iceland. See ICELAND.

This was done, Roosevelt told Congress, because if the Nazis occupied Iceland they would threaten not only Greenland and the North American continent, but all shipping in the North Atlantic. He assigned the Navy the task of keeping the sea lanes open between the United States, Iceland, and other outlying garrisons. Warships were to shoot if attacked, and as early as July 11 Secretary Knox stated that an American destroyer had dropped a depth bomb when warned by its instruments of the proximity of a submarine. All of these steps had the manifest support of public opinion.

Until August, although it was manifest that the President was willing to do everything in his power to insure the defeat of the Axis, there had been no statement of his ultimate international aims. But in the middle of that month, at a dramatic meeting at sea with Winston Churchill, the broad principles of the Atlantic Charter were formulated. The two democratic leaders agreed that their nations sought no territorial gain or changes in opposition to the wishes of the peoples concerned. They recognized the right of all peoples to choose the form of government under which they live, and pledged that the sovereign right of self-government should be restored those forcibly deprived of their freedom. The democratic world order, they declared, would secure to all states equal commercial rights and equal access to raw materials, and would insure full collaboration among nations to bring about improved labor standards, economic prosperity, and domestic security. Once the Nazi tyranny had been overthrown, the peoples of the world were promised freedom from fear and want, freedom of the seas, and disarmament. (For text, see ATLANTIC DECLARATION.)

Meanwhile, in the middle of June, angered by an attack upon American shipping, the State Department ordered German and Italian consulates in the United States shut, German and Italian funds frozen, and Axis agents sent out of the country. American borders were closed to German and Italian travelers. This Executive Order of June 14, which froze the American assets of Germany, Italy, and all of Europe's occupied countries, included the resources of the Russian government, but with a proviso that they could be moved if a special license was granted. A few days later, Germany invaded Russia. On June 24, the Treasury Department issued a general license releasing \$39,000,000 of Russian assets. A month later (July 25), the

its efficiency. (See also UNION OF SOVIET SOCIALIST REPUBLICS.)

Late in the year, Secretary Hull had harsh words for Finland (q.v.). That nation, he declared, was acting in a manner inimical to American policy. While the Secretary was administering this reprimand, Maxim Litvinov, long an advocate of collective security against fascist aggression, replaced Constantine Oumansky as Russian ambassador to the United States.

Inasmuch as the United States was the principal source of supplies for the anti-Axis coalition, the problem of keeping the sea lanes open greatly troubled the President. For several years huge sums had been appropriated to the U.S. Maritime Commission for the purpose of building ships; and in 1940 construction was speeded up to replace the British and Allied vessels sunk by submarines. Rapid progress was made in shipbuilding—one large tanker was completed within ninety days after its keel was laid. (See SHIPBUILDING; SHIPPING.) The British meanwhile, aided by patrol work of the American Navy, made effective resistance to the submarine campaign. Nevertheless, the Battle of the Atlantic remained a source of acute anxiety, and many Americans were in favor of using the Navy to help convoy British ships carrying lend-lease materials. This movement aroused the anger of the isolationists. Early in May, fifty Senators and Representatives organized a bloc, led by Senator Taft, to oppose convoys "by whatever name they may be called." But that same week, the Senate Foreign Relations Committee significantly voted down resolutions forbidding convoys.

The attitude of the President was clear; for on May 6 Secretary Stimson, after talking with him, had declared it of the first importance to use the Navy to safeguard the delivery of munitions to Britain. This statement was underlined by the sinking of the American freighter *Robin Moor* by a submarine on May 31 in the South Atlantic. Other sinkings followed. Midsummer saw large American naval and air forces patrolling the Atlantic, and on September 11 President Roosevelt, in a speech broadcast to the world, warned the Axis that American warships and planes would fire at the sight of Axis warships which entered waters vital to American defense.

As Nazi attacks on American merchant ships and naval vessels increased, the President indicted the German Government in strong terms. On October 17 the destroyer *Kearny* was torpedoed off Iceland and badly damaged; on October 30 came news of the torpedoing and sinking of the destroyer *Reuben James* west of Iceland; while on November 4 the naval tanker *Salinas* was torpedoed in the same waters. The President called for modification of the Neutrality Act to permit the arming of American merchant ships, and to authorize their passage through combat zones into belligerent ports. A bill for this purpose passed the Senate, 50 to 37, on November 7, and the House, 212 to 194, less than a week later. The narrowness of the margin in the House was traceable in large part to dissatisfaction with the President's leniency toward strikers in industries essential to defense. Before the House voted, Roosevelt had to make a last-minute promise to deal severely with obstructive labor elements.

Tense as the situation was in the Atlantic, a still graver crisis developed during October and November in the Pacific. Japan, her trade with America cut off, was in an increasingly serious economic predicament. (See article on JAPAN.) The resignation of Prince Konoye's Cabinet in Tokyo on October 16 was regarded in Washington as an ominous sign;

and two days later General Tojo became head of a Ministry obviously hostile to the United States. Two special Japanese envoys, Admiral Nomura and Saburo Kurusu, were received by the President and Secretary Hull on November 17. But it was soon evident that the American and Japanese Governments were still deadlocked, while the tone of Premier Tojo's speeches was consistently obstinate. On November 26, Secretary Hull gave the Japanese a memorandum stating the American terms for a settlement. These included the withdrawal of all Japanese troops and naval forces from China and Indo-China; recognition by Japan of Chiang Kai-shek's Chinese National Government; abandonment by Japan and the United States of all extraterritorial rights in China; a new trade agreement between Japan and the United States; removal of all restrictions upon the funds of Americans in Japan and of Japanese in the United States; and an arrangement for stabilizing the yen with the dollar. The United States also invited Japan to change sides and throw her weight against Germany and Italy, and in favor of a just world-settlement on nonaggressive lines.

A few days later, while ominous reports of Japanese troop movements began to pour into Washington, President Roosevelt despatched a personal message to Emperor Hirohito, earnestly requesting a peaceful settlement of the Far Eastern situation. But the government of Admiral Tojo had for some time made up its mind to deliver a treacherous surprise attack. President Roosevelt received his reply on December 7 in the form of Japanese bombs dropped on the Pearl Harbor Naval base, where the United States lost six ships, including one battleship, and many airplanes. Shortly after the attack began, Kurusu and Nomura notified Secretary Hull that the American terms were unacceptable; and they heard him declare that Japan's conduct in the negotiations thus ended had been "infamously false and fraudulent." The next day Congress formally declared war with but one dissenting vote. On December 10 Germany and Italy declared war upon the United States, and Congress immediately responded with unanimous declarations of war upon them. (For military events, see WORLD WAR.)

Latin America. As the European scene grew more threatening, the government moved to improve relations with Latin America. Early in March, Panama announced that it had agreed to permit the United States to build air defenses on its territory for the purpose of strengthening the canal. These were to be occupied for the duration of the international crisis. Mexico also permitted the United States the use of her airfields.

On April 1, Congress passed a joint resolution declaring that the United States would not recognize any attempt to transfer any geographic region in the Western Hemisphere from a non-American power to a non-American power. A week later, when President Roosevelt ordered the seizure of German, Italian, and other vessels in the harbors of the United States and its possessions, several Latin-American nations took similar action. In October, to ensure the loyalty of Brazil, the lend-lease administration extended a loan of \$100,000,000 to that nation. The next month, the United States agreed with Mexico to stabilize the peso by buying fixed amounts of Mexico's silver production. An agreement was also reached whereby the United States was to finance a Mexican road-building project. Mexico, in turn, promised to pay \$37,000,000 over a period of years to settle all agrarian and "general" claims of American nationals, to make a

trade agreement with the United States, and to attempt a settlement of the troublesome petroleum expropriation controversy. Late in the year, a small force of American troops was sent to Dutch Guiana to protect this important source of bauxite. The American Government promised to withdraw the troops as soon as the Axis threat was removed.

Meanwhile, various agencies in the office of Nelson Rockefeller, coordinator of inter-American affairs (q.v.), virtually bombarded the South Americans with good will. The coordinator also revealed to the President the names of 1,800 firms and persons in Latin America deemed to have been acting to benefit Germany and Italy; and on July 17, Roosevelt by proclamation forbade trade with them. Subsequent additions were made to this list. See also INTER-AMERICAN UNION OF THE CARIBBEAN; PAN AMERICANISM.

Canada. American diplomacy was active to the North as well as in the South. Early in the year representatives of Canada and the United States signed in Ottawa an agreement for the development of power throughout the Great Lakes and St. Lawrence Basin, and for a deep waterway from the head of the lakes to the harbor of Montreal. In April, Prime Minister Mackenzie King met with President Roosevelt and the outline of a coordinated war effort was discussed. The result was the President's announcement on April 20 of a Canadian-American pact for cooperation in the production of war materials for Great Britain and the democracies generally. On June 2, President Roosevelt signed a defense measure permitting Canadian ships to carry ore between American Great Lake ports during the 1941 season. In November, the United States Senate ratified a treaty with Canada allowing diversion from the Niagara River of additional water for power purposes.

See also ARGENTINA, AUSTRALIA, BOLIVIA, BRAZIL, BULGARIA, CANADA, CHILE, CHINA, COLOMBIA, COSTA RICA, CUBA, CZECHOSLOVAKIA, DENMARK, DOMINICAN REPUBLIC, ECUADOR, EIRE, FINLAND, FRANCE, FRENCH INDO-CHINA, GERMANY, GREAT BRITAIN, GREECE, GUATEMALA, HAITI, HONDURAS, HUNGARY, ITALY, LATVIA, LIBERIA, LITHUANIA, LUXEMBURG, MEXICO, NETHERLANDS, NETHERLANDS INDIES, NEWFOUNDLAND, NEW ZEALAND, NICARAGUA, NORWAY, PANAMA, PARAGUAY, PERU, PHILIPPINES, POLAND, PORTUGAL, RUMANIA, SALVADOR, SPAIN, THAILAND, TURKEY, URUGUAY, VENEZUELA, and YUGOSLAVIA, under *History*; PAN AMERICAN UNION. For United States defense bases in British possessions, see ANTIGUA, BAHAMAS, BERMUDA, BRITISH GUIANA, JAMAICA, NEWFOUNDLAND, ST. LUCIA, and TRINIDAD, under *History*.

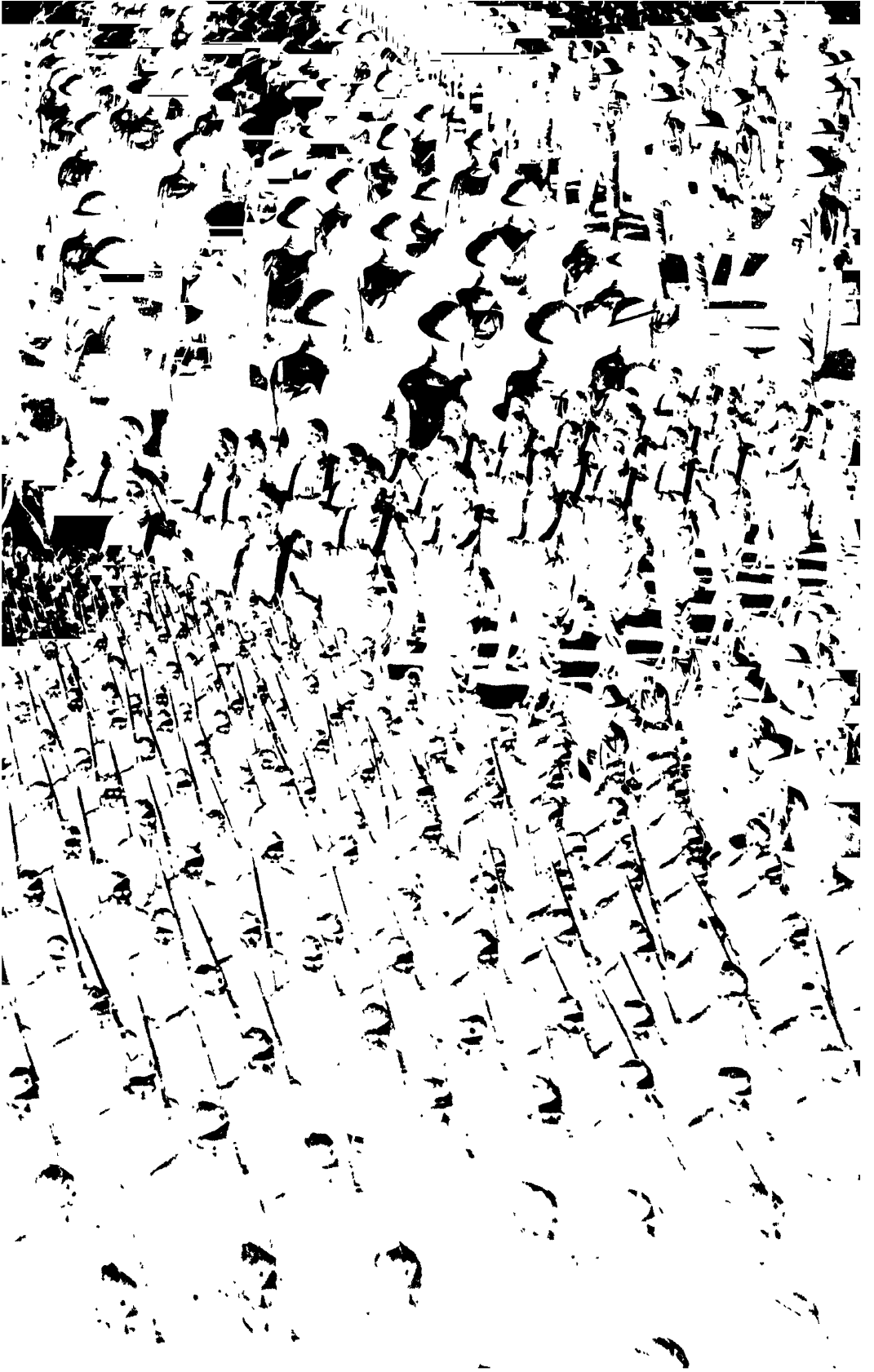
Defense. The growth of the defense effort during 1941 required constant development and change in the administrative bodies conducting it. By the end of the year, there were 35 separate divisions, agencies, or offices concerned with defense under the President. (For a complete list, see NATIONAL DEFENSE AND WAR AGENCIES.) While Mr. Roosevelt has delegated increasing powers to various individuals and organizations, he has always retained ultimate control over all important matters of policy. In the defense administration when the year closed the most important agencies were the Office of Production Management, the Office of Price Administration, and the Supply Priorities and Allocations Board. It was the task of OPM (now War Production Board), the principal heads of which were William Knudsen and Sidney Hillman, to mobilize the nation's industry for the war effort. J. D. Biggers headed the production division, D. M. Nelson the purchases division, E. R. Stettinius, Jr., the

priorities division, and Leon Henderson, a price subdivision. In April, the price stabilization function was given over to a newly created agency, the Office of Price Administration and Civilian Supply headed by Leon Henderson. In August, Donald Nelson succeeded Stettinius as head of the priorities division, and D. MacKeachie was named purchasing director, succeeding Nelson, while Stettinius was made Lend Lease Administrator. The Supply Priorities and Allocations Board is a controlling and coordinating body with functions that are fairly well indicated by its name. Henry A. Wallace is chairman.

The Office of Lend Lease Administration is responsible for maintaining a constant flow of munitions and supplies to Axis opponents under the terms of the Lend Lease Act. Originally, the President designated Harry Hopkins to advise and assist him in carrying out the act. Hopkins was familiar with Britain's needs, having visited that country in January as Mr. Roosevelt's representative. Later he visited Russia. On August 28, Hopkins was appointed special assistant to the President in charge of all lend lease aid and Edward R. Stettinius was designated Lend Lease Administrator. The President, on September 16, changed the title of Mr. Stettinius to Special Assistant to expedite lend lease aid deliveries. At the time of the October appropriation of \$5,985,000,000 for lend lease administration, the President issued an executive order creating an Office of Lend Lease Administration with Stettinius as director.

Of cardinal importance to the defense program was the problem of priorities. On February 24, by Executive Order, the Federal government assumed priority control of the production of aluminum and machine tools. Later, on June 2, Congress authorized the President to impose mandatory priorities of wartime scope upon all of industry. Not only could the administration grant priority to contracts placed by the army and navy, but it was also given authority to establish the order in which materials and machines were to be delivered for all planes, tanks, ships, and other equipment produced for the lend lease administration. Then in August, Justice Samuel I. Rosenman of the New York State Supreme Court suggested the creation of the Supply Priorities and Allocations Board for the purpose of coordinating the work of those agencies directly concerned with civilian and war supply. As part of a general reorganization scheme, he suggested that the civilian supply section in the Office of Price Administration and Civilian Supply become the Division of Civilian Supply in OPM and that above the Office of Production Management should be established the Supply Priorities and Allocations Board to fix priorities and allocate supplies of raw materials, fuel, power, and other commodities.

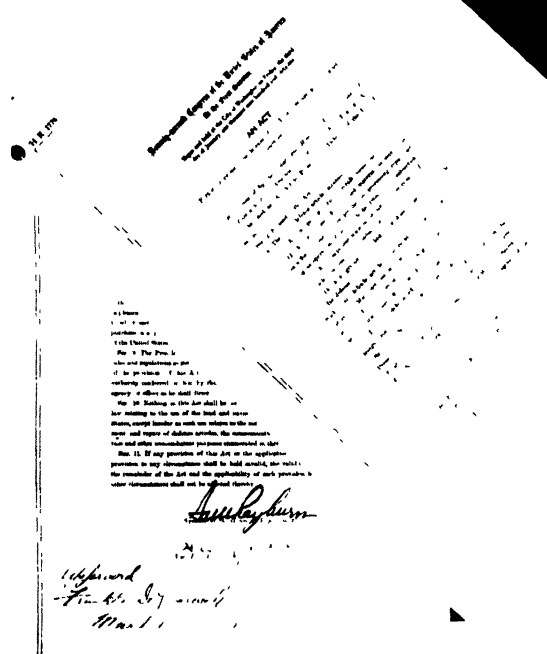
At first glance, it would seem that this latest defense agency merely added to the complexity of the already complicated defense structure. But a real reason existed for its creation. The principal heads of OPM, Mr. Knudsen representing industry and Sidney Hillman labor, were both reluctant to disrupt the nation's normal industrial life by rigorously requisitioning the materials of industry for the defense effort. Their caution was strongly criticized by Mr. Henderson, director of the Office of Administration and Civilian Supply. The conflict between the two agencies was resolved for better or worse in the following manner: Henderson's decisions as head of the Division of Civilian Supply were made subject to veto by Knudsen as head of the Office of Production Management. Knudsen's veto as head of the Office of Production





THE SUMMONS TO WAR

President Franklin D. Roosevelt is shown addressing a joint session of Congress on December 8, when he asked the legislators to declare that a state of war existed between the United States and the Japanese Empire. Behind him are Vice-President Henry A. Wallace (left), President of the Senate, and Speaker of the House of Representatives, Sam Rayburn of Texas. The war declaration was voted within less than an hour.



International News Photos

THE LEND-LEASE ACT

Properly known as "an act further to promote the defense of the United States" it provided for United States aid to all nations fighting aggression.

Management was made subject to a majority vote of the members of the Supply Priorities and Allocations Board. The majority decisions of the Supply Priorities and Allocations Board could, of course, be vetoed by the President.

However, the defense set-up was constantly changing, and as 1941 drew to a close it was apparent that still more drastic changes were imminent. A strong public demand for a one-man direction of the vast industrial effort, under the President and Congress, was being heard.

The President took additional steps to conserve the resources of the nation for the gigantic mobilization which the defense effort required. On February 25, aircraft pilot trainers, beryllium, graphite electrodes, belladonna, atropine, sole leather, and belting leather were placed under export license effective March 10. This list was subsequently altered to include cadmium, carbon black, coconut oil, copra, cresylic acid, cresols, fatty acids produced from vegetable oils under export control, glycerin, palm kernel oil, pine oil, petroleum coke, shellac, and titanium Effective March 24, jute, lead, borax, and phosphates were added. An Executive Order forbade exports of petroleum products from Atlantic coast ports to any countries except those of the British Empire and those of the Western Hemisphere.

Thirty million farm people in 1941 were told by Secretary of Agriculture Wickard that "Food will win the war and write the peace." Farmers were instructed to produce not less but more. Moreover, the government announced that it wanted changes in the character of farm production. Secretary Wickard declared that he wanted less wheat and less cotton, but more meat, fats, fruits, vegetables, and dairy products. It was Mr. Wickard's object in 1941 to tie the efforts of the American farmer tightly into the war economy.

The task of obtaining, digesting, and utilizing information for war purposes was assigned to three well-staffed agencies, the Office of the Coordinator of Information, headed by Colonel William Donovan; the Office of Government Reports, which was made a permanent Federal Agency; and the Office of Facts and Figures, headed by Archibald MacLesh.

For further details, see separate articles on each of the above agencies.

Civil Liberties. Despite the concentration of power in the hands of the government and the pressure for a variety of restrictions, civil liberties throughout 1941 remained sturdily intact. The opponents of war had had their say, and when war came they acknowledged the importance of fighting it through until ultimate victory was achieved. Organizations which even after December 7 were unreconciled to the conflict went unmolested. Only the press of the German-American Bund was suppressed. The Department of Justice was active in rounding up enemy aliens (q.v.) once war was declared, but persons who had no apparent connection that was inimical to the defense effort were soon released. A Washington Grand Jury investigating Nazi activities indicted George Hill, Secretary to Representative Hamilton Fish, for perjury, and he was later convicted. George Sylvester Viereck, a registered Nazi agent, was indicted for withholding information concerning his activities as a foreign agent; while Laura Ingalls, famous woman flyer, was also indicted for receiving funds from the German government. But these cases, and some others like them, had nothing to do with civil liberties.

Although the Federal Bureau of Investigation (q.v.) in June smashed a Nazi spy ring of thirty-

three persons, the Department of Justice announced that only a negligible amount of sabotage could be attributed directly to the activity of enemy agents. In was only in Hawaii that the activities of foreign agents and fifth-columnists were serious.

The fact that there were not more cases of sabotage can be attributed in large part to the sudden shift in the Communist Party line following the German attack on Russia. Once Hitler invaded the Soviet Union, Communists ceased to regard the war as another imperialist struggle in which the working class of the world had no interest save to take advantage of whatever opportunities the struggle offered to stir resentment against the ruling class. For them, the war had become an humanitarian crusade to free the oppressed peoples of the world from the yoke of the fascist oppressors; and they rallied strongly behind President Roosevelt's defense effort. (See COMMUNISM.)

The Federal Government did its part to bring about better relations with the Soviet Union. Harry Bridges, an alien labor leader whom special examiner Charles B. Sears had recommended for deportation on the ground of affiliation with the Communist Party, was permitted to remain in accordance with the decision of a higher authority. The deportation proceedings against Joe Santo, once an official of the Transport Workers Union, were postponed indefinitely by the Bureau of Immigration and Naturalization. In Manhattan, the Rapp-Coudert committee, appointed by the New York State legislature to investigate subversive activities in the New York City schools, quietly folded its tents and departed from the scene. But things went badly for a small band of voluble Trotskyites who controlled the teamsters union in Minneapolis. Attorney General Biddle obtained their conviction on the ground of creating insubordination in the armed forces of the government.

Racketeering in the American Federation of Labor was dealt a blow when William Bioff and George Brown were convicted of extorting half a million dollars from four motion picture companies.

Administrative Officers and Developments. President, Franklin Delano Roosevelt; Vice-President, Henry A. Wallace; Secretary of State, Cordell Hull; Secretary of the Treasury, Henry Morgenthau, Jr.; Secretary of War, Henry L. Stimson; Attorney General, Francis Biddle; Postmaster General, Frank C. Walker; Secretary of the Navy, Frank Knox; Secretary of the Interior, Harold L. Ickes; Secretary of Agriculture, Claude R. Wickard; Secretary of Commerce, Jesse H. Jones; Secretary of Labor, Frances Perkins.

On June 12, Harlan Fiske Stone was made Chief Justice of the Supreme Court and James F. Byrnes and Robert H. Jackson were made associate justices. Francis Biddle replaced Jackson as Attorney General.

Late in the year, the Office of Production Management and the Department of Justice approved a policy whereby factories and plants might pool their productive resources to take on arms orders without fear of prosecution under the anti-trust laws.

A special committee of the Attorney General's office, headed by Dean G. Acheson, studied the problems created by Federal administrative agencies, with a desire not to hamper them "but to suggest improvements to make the process more workable." Its thousand-page report opposed the judicial curb on administrative agencies embodied in the Walter-Logan bill as unnecessary, but recommended other reforms: creation of an Office of Federal Administrative Procedure to study the

practices of quasi-judicial agencies; simplification of the procedure and regularization of the rules of such bodies; appointment in each agency of "hearing commissioners" to judge hearings; and provision that no prosecutor of a case should help judge it.

The Department of Justice ruled on July 16 that the Hatch Act, prohibiting Federal employees from engaging in political activities, does not apply to officers of the National Guard and selectees.

Within the Department of Justice was created a small business section; for the Administration, responding to pressure, became particularly interested in seeing that small business got its share of defense orders. The Federal Reserve Bank was instructed to extend credits to small business engaged in defense production. President Roosevelt on August 11 issued an Executive Order directing the Federal Reserve Board to use a World War statute to curb installment credit used for purchasing "consumers' durable goods."

Nonpartisan Unity. Throughout the year, prominent Republicans opposed the concentration of power in the hands of the executive. Echoes were heard of the isolationist charge that the President was using these powers to bring the nation closer to war. However, by the end of November even such a bitter opponent of President Roosevelt as Senator Taft was willing to admit that the peril of the foreign situation made an increase in the power of the executive necessary. Yet he was unwilling that the Congress should forego supervisory control.

Although individuals at times crossed the party line, Republicans for the most part opposed the vigorous anti-Axis policy of the administration. The one big break occurred when, under the prodding of Wendell Willkie, three Republican Senators came out for the repeal of the Neutrality Act. A few days later more than a hundred leading Republicans joined Willkie in a manifesto to the effect that the Neutrality Act should be repealed.

The foremost symbol of bipartisan unity was Wendell Willkie. Writing in the *Nation*, Arthur M. Schlesinger, Jr., drew a significant parallel between his activity in building Republican support for the foreign policy of the Roosevelt administration, and the role of Seward in rallying the Conscience Whigs behind Lincoln during the Civil War.

Labor. Labor organizations continued to gain in strength throughout the year, both the A.F.L. and the C.I.O. claiming about five million members as 1941 ended. Labor strife seemed incessant; the Department of Labor reported that in the first eleven months of the year, no fewer than 2,361 strikes were called, involving 2,389,685 workers in a loss of 22,448,787 man-days. Since many strikes directly affected the defense program, a demand arose for restrictive legislation. To this the Administration showed itself unfavorable, and no action was taken. Early in the year the House rejected a number of anti-strike proposals by large votes. However, public sentiment seemed strongly aroused by the tactics of John L. Lewis, head of the United Mine Workers, who in two important labor disputes tested the Federal Labor policy. One affected the soft coal miners, and terminated in a labor victory when the National Defense Mediation Board eliminated the forty-cent-a-day wage differential between the Northern and Southern areas in the Appalachian field. The other dispute involved the "captive" coal mines of the seven largest steel companies, which were on an open-shop basis. Late in October Mr. Lewis called a strike in defiance of President Roosevelt, who made three appeals to him to keep the men at work because of the de-

fense emergency. The strike was halted while the Mediation Board investigated the dispute; but after the Board on November 10 rejected the demand for the closed shop by a vote of 9 to 2, Mr. Lewis again called out the mine-workers. Once more the strike was stopped when President Roosevelt proposed arbitration. A board headed by Dr. John R. Steelman, director of the United States Conciliation Service, debated the matter; and on the same day that the war began Dr. Steelman joined Mr. Lewis in granting a closed union shop to the United Mine Workers, while B. F. Fairless, head of the United States Steel Corporation, dissented. Thus ended a dispute which at one time had threatened by sympathetic strikes to involve 450,000 miners and to cripple the steel industry. The House of Representatives in November showed its resentment by passing by a large majority the Smith bill to curb strikes severely; but the measure went no further.

The President intervened in another labor dispute. After a strike vote by the railway employees on August 5, he acted under the Railway Labor Act to set up an emergency mediation board. This, under the law, operated as a stay of proceedings. Late in the year the dispute was ended by a compromise increase in wages amounting to \$311,000,000 a year.

Throughout the year, the administration made extensive use of its good offices in helping management and labor patch up their differences. Federal labor conciliators scurried about the country, appearing wherever labor troubles threatened the disruption of production. Particularly difficult stoppages were certified to the newly-created National Defense Mediation Board by the conciliation service of the Department of Labor. Whenever the efforts of these agencies failed to promote a settlement, the administration resorted to other means. In June the President ordered the plant of the North American Aviation, Inc., at Inglewood, California, taken over to break a stubborn strike allegedly inspired by Communists. Later Federal troops took over the plant of Air Associates, Inc., at Bendix, New Jersey, after its officers had treated labor in a "recalcitrant" manner. The Navy took over the yard of the Federal Shipbuilding and Dry Dock Corporation after failure of the management to comply with a ruling of the National Defense Mediation Board (q.v.).

The Administration won a major victory when the Fair Labor Standards Act was upheld in the U.S. Supreme Court. It was bitterly criticized by labor for granting a contract early in the year to the Ford Motor Company, despite Ford's alleged refusal to comply with the terms of the National Labor Relations Act. On the other hand, OPM was attacked by employers for granting the American Federation of Labor closed shop privileges on defense construction contracts. The National Labor Relations Board, once harshly criticized, received fewer attacks as the year progressed. Edwin S. Smith, accused of bias in favor of the C.I.O., was denied a reappointment, the President giving his place to Gerard D. Reilly, former solicitor of the Department of Labor. See LABOR CONDITIONS.

LEGISLATION

77th Congress, First Session. The first session of the 77th Congress convened on January 3 and remained in session throughout the year. It adjourned formally on Jan. 2, 1942, after 365 days of session. The Senate had a membership of 66 Democrats, 28 Republicans, 1 Progressive, and 1 Independent. The House of Representatives had a mem-

bership of 267 Democrats, 162 Republicans, 3 Progressives, 1 Farmer-Laborite, 1 American Laborite, and 1 Independent Democrat.

The President of the Senate until January 20 was John N. Garner. On that day the post was assumed by Henry A. Wallace. The majority leader was Alben W. Barkley of Kentucky; majority whip, Lister Hill of Alabama; minority leader, Charles L. McNary of Oregon; and minority whip, Warren R. Austin of Vermont.

The Speaker of the House was Sam Rayburn of Texas; majority leader, John W. McCormack of Massachusetts; majority whip, Patrick J. Boland of Pennsylvania; minority leader, Joseph W. Martin, Jr., of Massachusetts; and minority whip, Harry L. Englebright of California.

Main Features of the Session. Legislation of the first session of the 77th Congress dealt mainly with national defense, taxation, and appropriations, and included the declarations of war on Japan, Germany, and Italy, and a wide expansion of the President's emergency powers. The total appropriations granted by the session amounted in round figures to \$58,000,000,000, of which approximately \$50,000,000,000 represented national defense commitments. The aggregate defense expenditures authorized from June 1, 1940, to Jan. 2, 1942, were stated by the Budget Bureau to be in round numbers \$71,000,000,000. In 1917-18, appropriations had totalled approximately \$36,000,000,000 during a congressional session of 354 days.

Congress in February lifted the statutory debt limit to \$65,000,000,000. This was an imperative measure, for the Federal debt was steadily rising; in the year ending Nov. 30, 1941, it grew by a total of \$10,828,597,372. Defense expenditures by the close of 1941 were at a rate exceeding \$1,500,000,000 monthly, and were then expected to rise in 1942 to more than \$4,000,000,000 out of a total national income of perhaps \$100,000,000,000. A heavy increase in taxation was indispensable. Congress was therefore asked to pass revenue measures which, bringing an additional \$3,500,000,000 into the Treasury, would lift the entire tax load to about \$13,000,000,000 a year. The President indicated in his budget message of January 8 that non-defense and nonfixed expenditures would be cut 15 per cent; but important groups continued to urge heavier reductions in these categories. See PUBLIC FINANCE.

Congress acted deliberately in framing the new tax bill, which did not pass the House until August 4, and the Senate till September 17. This measure, signed by the President September 20, imposed a wide variety of new levies, raised the income-tax rates steeply, and broadened the base of taxation by including low-income groups. More than half of the \$13,000,000,000 of Federal revenue would come from income and excess profits taxes. The Administration continued to press for additional taxes, and on September 24 Secretary Morgenthau recommended a 100 per cent tax on all corporate gains over 6 per cent. He also suggested a 15 per cent levy on payrolls, to be withheld at the source. But the year closed without action on these proposals. Resort was, of course, had to loans. Defense savings bonds and stamps went on sale May 1, and by the close of the year had yielded the Treasury more than \$2,500,000,000. The selling-pace increased sharply after the Japanese attack on Pearl Harbor early in December. See TAXATION.

Control of prices early became a major problem of defense economics. Remembering that in the first World War the general price level ultimately rose nearly 150 per cent and the cost of living more

than doubled, the public showed marked uneasiness over inflationist tendencies. During 1941, according to the Bureau of Labor Statistics, wholesale prices rose 18 per cent; the cost of living at the close of the year was 12 per cent higher than when war began. Price Administrator Leon Henderson estimated that if the rate of price-increases continued unchecked, the cost of the victory program would be increased by \$50,000,000,000. Mr. Henderson, though without legal authority to do so, fixed a large number of prices, and obtained a remarkable cooperation from industry. In July, when commodity averages advanced to a higher point than at any time since April, 1930, President Roosevelt called upon Congress "to act decisively and without delay" in passing price-control legislation. But powerful agricultural groups were hostile to price-control except with generous concessions to farmers, and when 1941 ended no legislation had been enacted. See BUSINESS REVIEW under *Commodity Prices*.

Although the world crisis mounted in gravity throughout the year, Congress yielded to pressure groups in passing various pieces of farm legislation, pension legislation, and highway legislation that were widely denounced as selfish grabs. The President vetoed a \$320,000,000 highway bill, which was repassed by the Senate over his veto, and a farm bill to freeze government stocks of cotton and wheat despite world needs. He announced on May 19, through Secretary Wickard, that he favored parity prices in 1941 for basic crops, and made it plain later that he opposed efforts of the farm bloc to fix a ceiling for agricultural prices at 110 per cent of parity.

On December 16 both houses of Congress passed bills to revive the broad war authority granted to President Wilson in 1917.

Enactments. There follows a brief summary of conspicuous features of the important measures enacted by Congress.

Chief Military Appropriations:

Emergency Cargo Ship Construction Act \$350,000,000, Army Clothing-Equipment Act \$175,000,000; Fourth Supplemental National Defense Act \$1,376,464,606; Navy Public Works Act \$100,502,883; Second Navy Public Works Act \$245,228,500; First Lease-Lend Appropriation Act \$7,000,000,000; Fifth Supplemental National Defense Act \$4,393,221,174; Defense Housing Act \$150,000,000; Naval Appropriations Act \$3,415,521,750; Navy Auxiliary Vessel Act \$300,000,000; Defense Public Works Act \$150,000,000, Military Establishment Appropriation Act \$10,384,821,624; Second Deficiency Appropriation Act \$1,041,444,529, Second Lease-Lend Appropriation Act \$5,985,000,000; Naval Facilities Act \$585,000,000, Third Navy Public Works Act \$244,929,800; First Supplemental National Defense Act, 1942, \$7,586,896,948, Second Supplemental National Defense Act, 1942, \$6,161,467,229, Defense Highway Act \$150,000,000; Navy Local Defense Ship Act \$800,000,000; National Defense Emergency Appropriation Act \$550,000,000, Third Supplemental National Defense Act, 1942, \$9,283,037,005

National Defense Measures:

The Naval Ship Alteration Act, signed January 29, authorized major improvements in the anti-aircraft defenses of combatant and auxiliary vessels of the Navy at a cost not exceeding \$300,000,000.

The Midshipmen Increase Act, signed January 29, increased the number of appointments at large to the Naval Academy from 15 to 25 and the number from the naval reserve from 50 to 100 It restored the five-appointment basis for each member of Congress.

The Lend-Lease Act, signed March 11, provided that for the benefit of any foreign nation whose defense the President deemed vital to the United States, he might sell, transfer, exchange, lease, or lend defense articles to any such nation, though only after consultation with the heads of the Army and Navy. He might also provide for repairing, reconditioning, outfitting, or testing any defense article used by such nations. This enactment was not to be construed as an authorization for conveying

The Defense Contract Bond Act, signed April 29, provided for the waiving of the Miller Act at the discretion of the Secretary of War or the Secretary of the Navy.

The Miller Act required mandatory performance and payment bonds in connection with supply contracts.

The Vinson Priorities Act, signed May 31, extended the President's authority under the Vinson Expediting Act of 1940 to priorities for orders for countries whose defense the President deems vital to the defense of the United States; with subcontracts or orders which the President should deem necessary to the fulfillment of these aims.

The Defense Public Works Act, signed June 28, authorized an appropriation of \$150,000,000 for the acquisition and equipment of public works made necessary by the defense program.

The Military Service Extension Act, signed August 18, authorized the President to extend for such periods as might be necessary in the interests of national defense, the periods of a service of all persons inducted into the armed forces for training. Such a period, however, was not to exceed eighteen months in the aggregate.

The Property Requisitioning Act, signed October 16, authorized the President during the national emergency and until June 30, 1943, to requisition property producing material essential to the defense of the United States. This was to be done only after all other means had been exhausted. Fair and just compensation to the owners was provided for.

The Neutrality Act Amendment, signed November 17, repealed section 2 of the Neutrality Act of 1939, which forbade commerce with States engaged in armed conflict; section 8 which authorized the President to prescribe and proclaim combat areas within which American merchant vessels might enter, section 6 which forbade the arming of American merchant vessels.

The Defense Highway Act, signed November 19, appropriated \$150,000,000 for the construction and improvement of access roads to military and naval reservations, defense industries, and sources for raw materials.

Removal of Restrictions on Service Act, signed December 11, suspends during the existence of any war in which the United States is engaged and for six months following its termination, the provisions of the law which impose restrictions on the territory within which portions of the military forces of the United States may be employed. See SELECTIVE SERVICE SYSTEM.

The First War Powers Act, 1941, signed December 18, fell into three parts. Title I, essentially the same as the Overman Act passed during the first World War, gave the President power to redistribute the functions of the various government agencies so that the war effort could be more effectively prosecuted. Title II gave the President power to waive bids on government work. Title III gave the President control over communications with foreign nations and the power to use property of the enemy which may be confiscated.

The Draft Act, approved December 20, amended the Selective Service Act of 1940 by extending the requirements for registration of men to include all those from 18 to 64 years of age, inclusive.

Seapower:

The Emergency Cargo-Ship Act, signed February 6, appropriated \$313,500,000 to the Maritime Commission to provide as rapidly as possible cargo ships essential to the commerce and defense of the United States.

The Bland Ship Requisitioning Act, signed June 6, authorized the President to take over by purchase or requisition any foreign vessels lying idle within the waters of the United States and its possessions.

The Merchant Ship Priorities Act, signed July 14, permitted the President to authorize the maritime commission to issue warrants evidencing priority rights in favor of certain vessels. The warrants were to be issued under regulations of the commission, approved by the President. See SHIPPING.

Housing:

The Defense Housing Insurance Act, signed March 28, amended the National Housing Act by adding a new title creating a Defense Housing Insurance Fund to handle the insurance of mortgages.

The Defense Housing Act, signed April 29, increased to \$300,000,000 the appropriation for defense housing. The average cost per family dwelling unit was not to exceed \$3,500.

The National Housing Act Amendment, signed June 28, continued for two years the authority of the Federal Housing Administrator to insure banks and mortgage companies making modernization loans. The aggregate insurance was increased to \$165,000,000.

The Defense Housing Insurance Act, signed September 2, increased to \$300,000,000 the aggregate amount of mortgages which may be insured under authority of the National Housing Act on property in areas in which the President determines that an acute shortage of housing exists so as to impede national defense.

Agriculture:

The Corn and Wheat Market Quota Act, signed May 26, 1941, established as farm marketing quotas for wheat and corn the actual production of the acreage planted, less the normal or actual production (whichever is smaller) of the

acreage in excess of the allotment granted. The bill also provided that if marketing quotas should become effective on corn or wheat for the 1941-42 marketing year, or subsequent years, a farmer producing in excess of his quota would have to store the excess, or deliver the excess to the Secretary of Agriculture, or pay a penalty on the excess equal to one-half of the basic loan in effect for cooperators.

The Agricultural Appropriation Act, signed July 1, 1941, gave the Department of Agriculture \$1,060,500,063 for the fiscal year ending June 30, 1942.

The Steagall Commodity Credit Act, signed July 1, extended until June 30, 1943, the life of the Commodity Credit Corporation.

The Parity Act, signed December 26, extended to Jan. 1, 1947, the period within which the Secretary of Agriculture might carry out the purposes of the Soil Conservation and Domestic Allotment Act.

The Sugar Quota Act, approved December 26, extended for an additional three years the quota system set up by the sugar marketing act of 1937.

Taxation:

The Excess Profits Tax Amendments Act, signed March 7, amended the Excess Profits Tax Act of 1940.

The Revenue Act of 1941, signed September 20, imposed new or heavier taxes designed to raise an additional \$3,553,400,000 annually to pay part of the cost of the nation's national defense and lend lease programs. See also TAXATION.

Miscellaneous:

The Alien Visa Act, signed June 20, permitted consular officials and the Secretary of State to deny visas to aliens who, in their opinion, sought to enter the United States for the purpose of engaging in activities detrimental to the public safety. See IMMIGRATION.

The Defense Entry and Departure Act, signed June 1, gave the President during the national emergency power to prescribe rules and regulations governing the entry into and departure from the United States.

The Petroleum Pipe Line Act, signed July 30, provided that whenever the President finds that the construction of a pipe line for the distribution of petroleum in interstate commerce may be necessary for the national defense, he shall be empowered to make such finding public. The construction is to be undertaken either by the government or by private persons, who shall be endowed with the right of eminent domain.

The Reconstruction Finance Corporation Act, approved June 10, gave the RFC authority to organize corporations to produce, manufacture, and deal in strategic and critical materials essential to national defense. It might acquire railroad equipment, rolling stock, and commercial aircraft facilities.

See FLOOD CONTROL; LABOR CONDITIONS, LAW

War Declarations:

War Declaration against Japan, signed December 8

War Declaration against Germany, signed December 11

War Declaration against Italy, signed December 11

Congressional Investigations. The Temporary National Economic Committee, after two years and nine months of work, made a report suggesting national charters for corporations doing business on a national scale; effective and thorough enforcement of the anti-trust laws; encouragement of new business and small enterprise by revision of the tax laws; and a national conference of representatives of business, labor, agriculture, and consumers to concentrate public thought on specific objectivities.

The motion picture and the radio were the subject of senatorial attack. However, the subcommittee which scrutinized their alleged interventionist activities was no ordinary Senatorial investigating committee. No senatorial vote authorized its work. Set up by isolationist Senator Wheeler, in his capacity as chairman of the Interstate Commerce Committee, and supported by other isolationists, it held hearings supposedly to determine whether an investigation should be made. It encountered general ridicule, and had reached no conclusions when the Japanese blow made its existence absurd.

A committee to investigate the eastern seaboard oil shortage, headed by Senator Francis T. Mahoney, after hearing testimony for eleven days, reported flatly that there was no oil shortage and recommended that Petroleum Coördinator Harold Ickes drop his order closing filling-stations at night and his 10 per cent cut in deliveries to distributors. Mr. Ickes disagreed, but eventually yielded.

The Senate Elections Committee held hearings on whether or not William Langer of North Dakota, accused of dishonest acts, should be seated. Senator Byrd was chairman of a committee to investigate nonessential government spending. National defense was naturally one of the most fertile subjects of congressional inquiry. Both the House of Representatives and the Senate had committees investigating alleged corruption and bribery in the awarding of defense contracts. A House committee under the chairmanship of Representative Tolan investigated workers' migration as connected with national defense. In December the House approved a resolution erecting a committee to investigate the problems of small business growing out of the defense emergency. A similar committee was active in the Senate under James E. Murray of Montana, who declared at the end of the year that priority-rulings threatened 10,000 or more firms with extinction within ninety days, and that remedies must be provided by research, education, and new laws. The Anti-Trust Division of the Department of Justice, under Thurman Arnold, was also busy with plans to protect both small businesses and consumers from the monopolistic or semi-monopolistic practices fostered by previous wars.

Representative Martin Dies and his congressional committee investigating un-American activities continued to be much in the news. In February, the House of Representatives voted to extend the Dies Committee for fifteen months. Mr. Dies continued to attack Communists and other radicals, particularly in government office. He gave his warm approval to a bill for the registration of all members of the Communist Party and the German-American Bund as agents of foreign governments. See COMMUNISM; FASCISM.

When James Byrnes left the Senate to become associate justice of the Supreme Court, W. F. George gave up his post as chairman of the Foreign Relations Committee to become chairman of

ogized to Wheeler. On July 3, four days before Roosevelt announced the presence of United States troops in Iceland, Senator Wheeler told newspapermen that he had been reliably informed that the United States was going to take over that island. The President accused Wheeler of jeopardizing the lives of the men engaged in this action by his premature announcement. Early in the year the President, stung by Charles A. Lindbergh's isolationist speeches, compared him to the defeatist copperheads of Civil War days, with the result that Lindbergh resigned his army commission.

Congress, as usual, functioned as a sounding board for all phases of public opinion, ranging in foreign affairs from the extreme isolationist to the extreme interventionist standpoint. In the debates on the lend-lease legislation and the amendment of the Neutrality Act excitement ran high, and impassioned speeches were delivered before packed Senate and House galleries. Unmoved either by applause or denunciation, the President quietly took the measure of public opinion, and plotted his course somewhere between the extremes of opinion—a course that never lacked firmness, and that when the war began gave the country a greater degree of unity than it had possessed in 1917.

ALLAN NEVINS (with EDWARD SAWETH).

UNIVERSALISTS. A religious denomination which holds as part of its doctrine the universal fatherhood of God and brotherhood of man. Headquarters, 16 Beacon St., Boston, Mass. See RELIGIOUS ORGANIZATIONS.

UNIVERSITIES AND COLLEGES. According to the *Educational Directory* published by the U.S. Office of Education, there were 1,699 institutions devoted to higher education in the United States in 1941. The distribution of these institutions by type, student body, and control is shown in the accompanying table:

INSTITUTIONS OF HIGHER EDUCATION IN THE UNITED STATES
[Statistics from U. S. Educational Directory, 1941]

Type of institution	Total	Distribution according to Student Body			Distribution according to Type of Control					
		Institutions for men	Institutions for women	Coeducational institutions	State control	District or city control	Private control	Denominational Protestant	National Catholic	
College or university	682	98	150	434	96	13	178	254	141	
Professional school	263	84	8	171	20*	1	158	64	20	
Teachers college	177	1	19	158	149	5	14	2	7	
Normal school	50	1	15	34	27	4	13	3	3	
Junior college	438	30	83	325	31 ^b	178	92	104	33	
<i>Negro institutions</i>										
College or university	62	2	2	58	15	2	7	37	1	
Professional school	7	1		6	1		4	2		
Teachers college	13		1	12	10	3				
Normal school	4			4			1	3		
Junior college	24		1	23	4	2	2	16		
Total:										
White institutions	1,610	213	275	1,122	323	201	455	427	204	
Negro institutions	110	3	4	103	30	7	14	58	1	
Grand total	1,720	216	279	1,225	353	208	469	485	205	

* Includes 3 under public control. ^b Excludes one (Canal Zone Junior College) under national control.

the highly important Finance Committee. Senator Tom Connally of Texas replaced him as head of the Foreign Relations Committee. The death of Senator Shepard of Texas brought Senator Reynolds of North Carolina to the chairmanship of the Military Affairs Committee.

The President and Congress. The administration had several sharp brushes with members of Congress. Secretary of War Stimson used the word "treason" in accusing Senator Wheeler of using his frank for the purpose of sending isolationist literature to men in army camps. A few days later Stimson apol-

According to the American Association of Junior Colleges, the number of junior colleges reported Jan. 1, 1942, was 627 with an enrollment of 267,000 students. The enrollment has more than doubled in the past five years. Somewhat less than half of the institutions are publicly controlled but they enroll almost three-fourths of the students. Of the 348 privately controlled junior colleges, slightly more than half are operated under denominational auspices, the Catholics leading with 48 junior colleges, followed by the Baptists with 42, and the Methodists with 39. Twenty-eight of the

UNIVERSITIES AND COLLEGES IN THE UNITED STATES

Institution and Address	Control or Affiliation	Date of Founding	Chief Executive	Faculty (number)	Degrees Earned (since founding)	Total Enrollment	Enrollment for 1940-41	School Year 1940-41	Summer School	Volumes in Library	Student Aid 1940-41 (exclude N.Y.A.)	Total Endowment	Gifts and for Appropriations 1940-41	Value of Plant
ALABAMA														
Alabama, University of	State	1820	Richard C. Foster	405	5,258	3,689	1,869	183	2,635	235,000	\$169,150	\$5,047,350	\$571,200	\$7,900,000
Alabama College, Montevallo	State	1896	A. F. Harman	77	2,163*	870	870	548	548	40,775	20,000	582,722	275,520	2,400,000
Alabama Polytechnic Institute, Auburn	State	1872	Luther Noble Duncan	277	9,915	4,191	3,326	164	2,417	81,582	.....	.....	.....	.....
Birmingham-Southern College, Birmingham	Methodist	1856	Raymond P. Paty	3,431	1,762	978	784	336	636	50,000	26,212	583,837	34,891	2,130,000
Howard College, Birmingham	Baptist	1842	Harwell G. Davis	54	3,200	680	480	363	380	32,000	38,000	750,000	19,000	855,000
Huntingdon College, Montgomery	Methodist	1854	Hubert Searcy	30	554	.....	554	123	123	16,500	13,000	400,000	40,000	900,000
Judson College, Marion	Baptist	1838	Leroy R. Priest	28	2,407	202	202	.....	.....	16,284	..	523,269	27,010	677,000
Spring Hill College, Spring Hill	Catholic	1830	W. D. O'Leary	47	1,886	747	577	170	239	42,150	9,500	197,000	15,000	1,000,000
State Teachers College, Florence	State	1872	J. A. Keller	39	442*	199	449	726	726	34,638	2,236	.....	.....	1,317,076
State Teachers College, Jacksonville	State	1883	C. W. Daugtee	60	626	741	247	494	118	748	4,000	.....	200,000	1,500,000
State Teachers College, Livingston	State	1883	N. F. Greenhill	26	253*	332	100	232	30	21,364	7,281	.....	83,100	717,593
State Teachers College, Montgomery	State	1874	H. Council Trenholm	47	570	1,062	.....	2,395	2,395	10,091	6,154	.....	100,967	975,000
State Teachers College, Troy	State	1887	C. B. Smith	30	469*	528	154	374	401	25,415	.....	1,000,000	.....	760,500
Tulledge College, Talladega	Private	1867	Buell Gordon Gallagher	30	900	283	119	164	.....	20,000	13,000	.....	.....	1,600,000
Tuskegee Institute, Tuskegee	Private	1831	Fred D. Patterson	160	1,176	1,422	934	488	110	52,000	4,133	6,978,500	104,905	3,982,633
ALASKA														
Alaska, University of College	Public	1922	C. E. Bunnell	35	256	310	229	81	.....	20,000	332,500	.....	135,750	950,000
ARIZONA														
Arizona, University of	State	1885	Alfred Atkinson	209	6,567	2,922	1,783	1,139	191	638	148,204	63,478	835,179	5,884,635
Arizona State Teachers College, Flagstaff	State	1899	Thomas J. Torney	42	2,500	464	247	217	14	522	27,477	.....	219,646	1,500,000
Arizona State Teachers College, Tempe	State	1885	Grady Gammage	80	5,477	1,355	691	664	124	643	30,000	.....	.....	1,656,347
ARKANSAS														
Arkansas, University of Fayetteville	State	1872	A. M. Harding	190	.....	2,641	1,896	745	89	982	167,000	.....	.....	3,500,000
Arkansas Agricultural and Mechanical College, Monticello	State	1909	Marvin S. Bankston	28	195	461	267	194	351	12,000	.....	.....	.....	.....
Arkansas State College, State College	State	1909	V. C. Kays	41	467	1,386	770	616	801	16,507	9,409	.....	.....	1,754,300
Arkansas State Teachers College, Conway	State	1907	Nolen M. Irby	43	1,572	795	332	463	592	22,000	15,291	.....	121,900	1,760,000
Henderson State Teachers College, Arkadelphia	State	1929	Joseph A. Day	39	705	593	298	295	470	22,663	11,908	.....	91,260	895,145
Hendrix College, Conway	Methodist	1884	John Hugh Reynolds	40	1,376	420	230	190	.....	42,500	6,610	1,034,260	.....	789,914
CALIFORNIA														
California, University of Berkeley and Los Angeles	State	1868	Robert Gordon Sproul	2,382	99,942	33,493	19,015	14,478	4,667	1,873,564	153,624	27,972,246	503,127	56,954,282
California Institute of Technology, Pasadena	Private	1891	Robert A. Millikan	374	3,533	970	970	344	.....	53,516	..	11,500,000	.....	11,693,405
Chapman College, Los Angeles	Disciples of Christ	1920	Cecil Cheverton	21	572	294	140	154	48	14,000	19,781	113,000	14,755	500,000
Claremont Colleges, Claremont	Private	1925	Russell M. Story	80	414	480	283	197	480	41,468	7,711	1,065,567	54,470	1,357,347
Dominican College of San Rafael, San Rafael	Catholic	1890	Sister M. Thomas	35	496	171	.....	171	256	30,000	.....	.....	.....	.....

Fresno State College, Fresno, State	1911	F. W. Thomas	127	2,620	2,862	1,481	1,381	....	296	49,216	\$	\$ 397,654	\$1,396,068
George Pepperdine College, Los Angeles Private	1937	Hugh M. Tiner	33	95	187	187	..	....	....	15,000	72,000	1,250,000	750,000
Holy Names, College of the, Oakland Catholic	1880	Sister Mary Loyola	47	556	349	...	349	17	300	25,342	3,175	3,392,894	1,630,656
Immaculate Heart College, Los Angeles Catholic	1916	Sister Mary Eucharis Harney	56	567	484	..	484	..	331	15,860	3,585	52,000	4,446
Loyola University of Los Angeles, Los Angeles Catholic	1865	C. A. McQuillan	55	1,077	543	365	178	..	..	25,492	48,433	....	129,958
Medical Evangelists, College of, Los Angeles Adventist	1909	Percy T. Magan	375	1,538	712	692	20	..	81	37,155	41,200	1,877,008	682
Mount St. Mary's, Oakland Private	1852	Aurelia Henry Reinhardt	106	2,300	649	7	642	..	332	85,801	120,054	....	15,413
Mount St. Mary's College, Los Angeles Catholic	1925	Sister M. Dolores	35	550	482	..	482	12	308	13,748	....	....	....
Occidental College, Los Angeles Presbyterian	1887	Remsen DuBois Bird	71	3,272	822	395	427	51	..	61,000	35,000	1,228,000	39,555
Pacific of the, Stockton Methodist	1851	Tully C. Knoles	68	2,986	1,013	215	238	173	387	40,000	43,140	614,415	2,500
Pacific Union College, Angwin Adventist	1882	Walter Irvine Smith	40	1,069	944	329	315	205	587	26,000	99,774	10,000	10,000
Pomona College, Claremont Private	1887	Charles K. Edmunds	84	4,582	849	449	400	..	..	98,500	39,415	3,808,996	96,868
Redlands of, Redlands Baptist	1909	Elsam J. Anderson	65	2,294	877	410	467	82*	214	56,000	74,412	3,444,427	4,494
St. Mary's College of California, St. Mary's College, Menlo Park Catholic	1863	Brother Austin	39	1,417	482	482	..	..	..	30,000	5,000	250,000	10,000
St. Patrick's Seminary, San Diego Sulpician . . . . .	....	Joseph V. Nevins . . . . .	....	....	....	....	....	....	....	....	....	....	....
San Diego State College, San Diego State	1897	Walter R. Hepner	96	..	2,253	1,116	1,137	..	395	76,000	6,200	..	461,043
San Francisco University of San Francisco Catholic	1855	William J. Dunne	97	2,732	1,377	1,240	137	..	244	55,000	16,172	....	23,894
San Francisco College for Women, Lone Mountain, San Francisco Catholic	1930	Mother Leonor Mejia	35	289	268	..	268	....	157	100,000	....	....	10,000
San Francisco State College, San Francisco State	1899	Alexander C. Roberts	111	2,915	2,448	949	1,499	....	1,240	47,300	....	....	1,357,993
Santa Clara, University of, Santa Clara Catholic	1777	Chas. J. Walsh	96	520	520	520	..	..	..	60,000	60,000	3,000,000	3,000,000
Scrpps College, Claremont Private	1926	Ernest James Jaqua	28	369	220	....	220	..	..	23,566	23,267	824,617	43,780
Southern California, University of, Los Angeles Private	1879	R. B. von Klein-Smid	914	29,616	16,218	9,521	6,997	1,754	6,352	276,000	150,000	1,600,000	....
Stanford University, Stanford University, Stanford University, Whittier Private	1885	Ray Lyman Wilbur	650	27,319	4,692	3,209	1,483	1,327	1,025	780,000	233,929	28,799,956	1,376,529
Whittier College, Whittier, Colorado Friends	1888	W. O. Mendenhall	50	1,890	691	294	397	20	266	44,952	18,000	703,000	6,000
Colorado, University of, Boulder State	1877	Robert L. Stearns	312	16,041	4,559	3,053	1,506	431	4,331	298,687	30,000	385,000	1,871,000
Colorado College, Colorado Springs Private	1874	Thurston J. Davies	75	3,000	833	474	359	36	241	120,000	51,450	2,401,961	41,015
Colorado School of Mines, Golden State	1874	M. F. Coolbaugh	78	2,725	773	773	....	14	583	45,000	30,350	..	225,000
Colorado State College of Agriculture and Mechanic Arts, Fort Collins State	1870	Roy M. Green	190	5,451	3,420	2,180	1,240	999	1,363	96,482	2,420	508,105	23,250
Colorado State College of Education, Greeley State	1890	George Willard Frasier	107	..	1,527	599	928	1,769	2,908	110,414	40,784	..	356,353
Denver, University of, Denver, Methodist Church	1864	Caleb F. Gates, Jr	325	11,151	3,607	1,922	1,685	573	1,624	....	112,165	2,648,296	63,395
Loretto Heights College, Loretto Catholic	1891	Paul J. Ketrick	29	322	216	..	216	..	65	15,000	....	....	....
Western State College, Gunnison State	1911	C. C. Casey	33	977	925	450	475	200	430	30,517	16,000	..	176,500
Albertus Magnus College, New Haven Catholic	1925	Sister M. Unel	35	353	175	175	52	151	16,500	31,072	3,039	7,150

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						Men	Women	Rate						
Connecticut, University of Storrs	.State	1881	A N Jorgensen	189		957	523	140	154	66,000	\$ 80,393	\$ 9,981	\$ 6,910,802	
Connecticut College, New London	.Private	1911	Katharine Blunt	88	2,392	760		2		90,000	29,785	1,542,843	4,558,785	
Dartmouth State Teachers College, Danbury	.State	1904	Ralph C Jenkins	40	223	214	55	159	463	20,000	4,483		600,000	
New Haven State Teachers College, New Haven	.State	1896	Fins E Engleman	63	400*	325	56	269	95	16,000	400			
St. Joseph College, West Hartford	.Catholic	1932	Sister M. Ross	33	278	510	510	364		30,700		5,600	1,308,406	
Tennessee College of Comm., Nashville	.State	1849	H D Welte	35	1,000	489	161	328		20,000	7,000	250,000	3,000,000	
Trinity College, Hartford	.Private	1823	Remsen Ogriby	63	568	560		8	155	130,000	10,500	232,928	3,806,684	
Widener University, Middletown	.Private	1831	James L McConaughy	79	6,190*	761	759	2	24	267,181	69,790		5,486,732	
Williamson State Teachers College, Williamsc	.State	1889	George H Shafter	40	161	163	23	140		25,000	5,850	130,000	600,000	
Yale University, New Haven	.Private	1701	Charles Seymour	1,052		5,274	4,839	674		2,219,900	254,530	102,188,400		
DELAWARE														
Delaware, University of Newark	.State	1833	Walter Hulihan	157	3,747	975	601	307	67	88,111	6,775	629,965	1,101,482	4,906,514
DISTRICT OF COLUMBIA														
Catholic University of America, Washington	.Catholic	1887	Joseph Corrigan	219	10,725	2,653	1,835	818	1,535	306,580	108,170	1,812,490	413,087	3,948,956
Georgetown College, Washington	.Baptist	1829	H. N. Sherwood	32	1,917	483	199	117	167	18,000	9,200	580,628	30,000	429,087
George Washington University, Washington	.Private	1821	Cloyd Heck Marvin	505	23,626	9,093	6,183	2,910	1,569	1,778	125,000	104,483	2,394,802	6,000,000
Miner Teachers College, Washington	.Municipal	1879	Eugene A. Clark	50	716*	721	148	573		26,425			304,699	
Trinity College, Washington	.Catholic	1897	Sister Catherine Dorothea Wilson	52	2,477	342	342			46,159	19,427			
Washington State Teachers College, Washington	.Public	1873	Walter E Hager	47	604*	498	132	366		27,000			308,357	
FLORIDA														
Florida, University of Florida, Gainesville	.State	1853	Jno J Tigert	197	6,916	3,438		175	2,805	155,000	121,088	290,302	945,000	8,700,000
Florida Agricultural & Mechanical College for Negroes, Tallahassee	.State	1887	J R E Lee	91		927	347	580	74	1,013	12,305		258,399	1,950,000
Florida Southern College, Lakeland	.Methodist	1885	Ludd M Sprivy	65		1,066	340	726	383	21,150	557,918	14,008	583,547	
Florida State College for Women, Tallahassee	.State	1905	Edward Conradi	176	4,884	2,029	2,029	27	1,189	86,441	37,557	740,237	4,955,880	
John B. Stetson University, Deland	.Baptist	1883	W S Allen	75	2,063	1,033	339	444	5	45,000	45,579	7,500	1,945,000	
Rollins College, Winter Park	.Private	1888	Hamilton Holt	76	1,150	435	209	5	60,780	115,266	1,041,872	167,717	1,630,784	
Agnes Scott College, Decatur	.Private	1889	J R McCain	65	2,028	538	538	268		33,500	12,350		1,750,000	
Atlanta University, Atlanta	.Private	1863	Rufus E Clement	54	890	101	167	667		67,500	16,205	4,541	2,052,389	
Brenau College, Gainesville	.Independent	1878	H J Pearce	44	2,344	456	399	57	19,012	30,000	550,000	21,466	600,000	
Emory University, Emory University, Athens	.Methodist	1836	H W Cox	298	11,165	1,407	88	124	788	190,000	28,000	1,295,470	7,661,332	
Georgia, University of Georgia, Athens	.State	1785	Marion W Caldwell	254	14,300	3,631	2,248	540	2,129	150,000	132,134	5,131,707	6,000,000	
Georgia School of Technology, Atlanta	.State	1885	Harmon L Brittan	187	7,544	2,866	2,866	441	800	53,000	40,000	185,000	5,000,000	
Georgia State College, Industrial College	.State	1891	B. F. Hubert	49	482	618	304	314	622	8,817	7,500		41,392	494,089
Georgia State College for Women, Milledgeville	.State	1891	Guy H. Wells	111	3,505	1,401		883	43,906	9,000		153,913	2,392,989	

State	1906	519	363	363	114	17,000	\$ 2,800	\$	65,000	\$	750,000
Georgia State Womens College, Valdosta	1926	607	610	363	114	25,000	14,965	1,330,861	60,000	600,000	
Georgia Teachers College, Collegeboro	1833	3,057	509	373	866	68,722	14,965	1,183,977	19,000	310,283	
Mercer University, Macon	1882	1,292*	368	116	3	67,000	5,778	33,000	5,029	333,635	
Norhouse College, Atlanta	1882	21	305	218	139	17,212	5,778	42,116	4,100	41,196	
Paine College, Augusta	1873	297	278	278	278	17,000	13,000	400,000	5,400	480,000	
Shorter College, Rome	1881	591	402	402	402	67,307	3,869	3,188,203	4,039	905,823	
Spelman College, Atlanta	1836	41	268	268	268	29,984	15,267	498,513	1,661,724		
Wesleyan College, Macon	1836	41	268	268	268	29,984	15,267	498,513	1,661,724		
HAWAII											
Hawaii, University of, Honolulu	1907	4,028	2,924	1,473	466	139,908	5,415	34,924	1,283,950	3,525,918	
Idaho											
Idaho, University of, Moscow	1889	7,500	2,848	2,006	138	95,000	44,000	2,867,000	2,900,000	2,900,000	
Idaho, Coll. of, Caldwell	1891	387	436	270	66	19,000		530,000		300,000	
Northwest Nazarene College, Nampa	1913	318	461	226	235	10,000	4,512		47,742	300,683	
Nazarene	1913	318	461	226	235	10,000	4,512		47,742	300,683	
Illinois											
Art. Institute of Chicago, School of Chicago	1879	85	820	288	242	47,846	32,465	937,672	5,000		
Augustana College and Theological Seminary, Rock Island	1860	58	3,390	1,465	707	758	100	1,303,317	24,613	1,545,755	
Aurora College, Aurora	1893	24	412	270	134	136		80,000	22,500	245,000	
Bradley Polytechnic Institute, Peoria	1897	72	2,343	190	396	50,967	16,162	2,353,444	435,519	1,259,717	
Carthage College, Carthage	1870	28	1,450	316	72	30,100	16,403	853,548	34,814	421,308	
Central Y.M.C.A. College, Chicago	1919	158	682	3,719	1,042	22,000	17,687	23,824	12,000		
Chicago, University of, Chicago	1891	873	48,354	11,897	6,389	4,370	1,330,152	451,326	72,502,175	3,297,585	
Chicago Musical College, Chicago	1867	86	2,877	1,113	275	838	11	523	3,500		
Chicago Teachers College, Chicago	1869	90	415	1,642	473	1,169	165	551	60,000	5,153,720	
De Paul University, Chicago	1898	216	10,000	6,834	2,157	3,546	631	2,506	70,000	2,186,000	
Eastern Illinois State Teachers College, Charleston	1895	91	1,141	1,192	570	622		785	54,404	2,054,000	
Elmhurst College, Elmhurst	1871	29	455	386	239	147			230,370	1,182,015	
George Williams College, Chicago	1890	17	1,005	309	222	87	99	27	16,300	69,685	
Illinois, University of, Urbana	1868	1,755	69,552	12,767	10,013	3,254	1,641	4,069	1,252,817	209,301	
Illinois College, Jacksonville	1829	27	2,266	343	71	36,333	17,924	1,146,372	9,220,921	36,781,884	
Illinois Institute of Technology, Chicago	1892	286	7,163	7,002	6,474	528	80	849	91,000	866,782	
Illinois State Normal University, Normal	1857	207	3,505	1,877	703	1,174			1,860,000	80,000	
Illinois Wesleyan University, Bloomington	1851	53	3,952	791	457	334	25	70	43,000	8,600	
Jones Millikan University, Lake College, Galesburg	1901	50	1,986	765	434	331			1,332,195	8,600	
Lake Forest College, Lake Forest	1837	57	4,701	631	385	246			1,006,745	266,817	
Loyola University, Chicago	1857	27	1,684	371	153	218			2,571,241	442,797	
MacMurray College, for Women, Jacksonville	1870	735	4,796	2,520	505	1,092			1,346,340	1,013,300	
Monmouth College, Monmouth	1846	55	1,081*	762	602	227			1,390,465	5,396,653	
Mundelein College, Chicago	1853	47	3,246	543	307	236			3,834,760	1,941,101	
North Central College, Naperville	1929	59	662	559	177	20,143			1,881,121	16,234	
Northern Illinois State Teachers College, DeKalb	1861	40	2,667	596	348	248			20,143	2,670	
State Teachers College, DeKalb	1895	81	1,143	1,631	523	1,108			27,000	20,297	
Teachers College, DeKalb	1895	81	1,143	1,631	523	1,108			49,710	9,271	

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						Total	Men	Women			\$				
Northwestern University, Evanston, Ill.	Methodist	1851	Franklyn Bliss Snyder	1,218	49,021	21,617	13,615	8,002	2,653	3,005	638,000	\$184,657	\$30,447,964	\$494,739	\$21,500,000
Principia College, Elsah, Ill.	Christian	1851	Frederic E. Morgan	36	320	331	159	172	.....	.....	30,000	140,000	2,801,000
Rockford College, Rockford, Ill.	Private	1858	Mary Anshy Cheek	50	1,374	301	301	301	28,500	29,871	7,329	815,000	
Reverend College, River Forest, Ill.	Catholic	1861	Sr. M. Evelyn	65	1,584	562	3	559	668	.....	44,277	122,000	2,944,000	
St. Francis College of Mount. Carmel, St. Francis, Ind.	Catholic	1925	Sister Mary Anneta	40	225	273	.....	273	380	.....	15,000	11,000	1,829,000
St. Francis Xavier College for Women, Chicago, Ill.	Catholic	1915	Sister Mary Ines	.....	431	391	.....	391	195	.....	90,000	6,616	1,397,687
Southern Illinois Normal University, Carbondale, Ill.	State	1869	Rosecoe Pulliam	142	2,201	2,378	1,303	1,075	.....	1,602	48,780	1,523,863	1,800,051	
Western Illinois State Teachers College, Macomb, Ill.	State	1899	W. P. Morgan	80	1,860	3,072	955	2,117	1,955	50,738	17,875	.....	2,320,664	
Wheaton College, Wheaton, Ill.	Private	1860	V. Raymond Edman	83	3,107	1,149	586	563	39	378	615,700	140,700	1,498,600		
Ball State Teachers College, Muncie, Ind.	State	1918	Lemuel A. Pittenger	104	3,147	1,898	751	1,147	164	1,439	.....	687,025	4,000,000	
Butler University, Indianapolis, Ind.	Christ	1850	D. S. Robinson	90	6,461	2,079	1,208	871	96	977	2,805,317	118,000	3,083,006		
DePauw University, Greencastle, Ind.	Methodist	1837	Clyde E. Wildman	115	9,289	1,543	811	732	6	.....	6,096,802	93,559	3,455,743	
Earlham College, Richmond, Ind.	Friends	1847	William Cullen Dennis	40	2,951	517	259	258	64	.....	1,328,950	4,197	900,000	
Evansville College, Evansville, Ind.	Methodist	1854	Lincoln B. Hale	41	1,476	559	302	257	354	.....	425,000	40,000	750,000	
Franklin College, Franklin, Ind.	Baptist	1834	William Gear Spence	30	1,923	345	196	149	2	41	35,000	7,250	5,410	514,000	
Hanover College, Hanover, Ind.	Private	1827	Albert George Parker, Jr.	25	.....	394	238	156	.....	.....	1,361,470	800,000	846,700
Indiana University, Bloomington, Ind.	State	1820	H. B. Wells	468	29,692	8,101	5,090	3,011	1,370	2,074	400,000	.....	.....
Indiana State Teachers College, Terre Haute, Ind.	State	1870	Ralph N. Turey	113	9,767	2,044	982	1,062	87	1,093	139,219	46,463	6,000,000		
Manchester College, North Manchester, Ind.	Brethren	1889	Vernon F. Schwalm	51	2,400	653	348	305	.....	444	612,238	1,783	615,239	
Notre Dame, University of, Notre Dame, Ind.	Catholic	1842	J. Hugh O'Donnell	313	20,469	3,314	3,314	3,314	149	1,197	1,010,100	.....	11,727,001	
Purdue University, Lafayette, Ind.	State	1869	Edward C. Elliott	711	20,469	7,219	6,508	1,711	786	1,823	340,000	3,513,413	17,503,718		
Rose Polytechnic Institute, Terre Haute, Ind.	Private	1874	Donald B. Prentice	30	1,819	289	289	.....	.....	.....	1,900,000	40,000	600,000
St. Joseph's College, Collegeville, Minn.	Catholic	1891	Aloys H. Dirksen	50	76	380	380	.....	.....	.....	26,000	.....	2,500,000
St. Mary-of-the-Woods College, St. Mary, Ind.	Catholic	1840	Mother Mary Bernard	41	1,200	241	.....	241	794	.....	606,700	.....	120,000
St. Mary-of-the-Woods College, Valparaiso, Ind.	Catholic	1844	Sister M. Madeleva	57	.....	435	.....	435	64	233	100,000	23,000	2,215,000
Valparaiso University, Valparaiso, Ind.	Catholic	1859	O. P. Kretzmann	42	.....	399	253	146	.....	73	551,422	104,823	1,119,344
Webb College, Crawfordsville, Ind.	Independent	1832	F. H. Sparks	30	3,444	441	441	.....	.....	.....	86,000	15,400	893,000
Clarke College, Dubuque, Iowa	Catholic	1843	Sister Mary Ambrose Mulholland	45	3,465	324	463	324	7	268	20,000	9,277	1,500,000		
Coe College, Cedar Rapids, Iowa	Presbyterian	1881	C. H. Geiger	65	.....	855	.....	392	.....	286	49,611	350,000	1,474,979
Cornell College, Mount Vernon, Iowa	Methodist	1853	J. B. Magee	50	4,050	640	322	318	121	1,197	60,000	35,000	1,114,449		
Drake University, Des Moines, Iowa	Private	1881	Henry Gadd Harmon	128	.....	2,765	1,450	1,345	368	929	1,623,161	18,878	1,152,463	
Dubuque University of Dubuque, Dubuque, Iowa	Presbyterian	1852	Dale D. Welch	37	1,500	518	310	208	45	104	23,000	40,980	660,452		
Grimnell College, Grinnell, Iowa	Congregational	1846	Samuel N. Stevens	75	1,400	750	373	374	3	.....	100,000	47,900	1,072,932	
Iowa State College, Ames, Iowa	State	1847	Virgil M. Hancher	600	44,006	9,289	5,860	3,429	3,815	3,027	571,347	2,340,180	22,114,117		
Iowa State College, Ames, Iowa	State	1858	Charles E. Friley	750	23,000	7,526	5,303	2,223	811	1,743	330,000	3,125,000	15,000,000		

	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250
Iowa State Teachers College, Cedar Falls, Iowa	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250

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						Total	Men	Women							
Nasareth College, Louisville	Catholic	1920	Sister Mary Anastasia Coady	49	434	571	37	370	37	21,000	\$ 4,500	\$ 1,484,537	\$ 5,362	\$ 300,600	
Transylvania College, Lexington	Christian	1780	Raymond F. McLain	31	584	308	276	158	158	41,381	32,000	1,484,537	20,584	777,411	
Union College, Barboursville	Methodist	1879	Conway Boatman	27	494	363	193	182	182	15,138	8,950	396,386	15,000	382,959	
Ursuline College, Louisville	Catholic	1838	Rev. Mother Roberts	30	29	110	110	14	14	15,765	3,750			700,000	
Western Kentucky State Teachers College, Bowling Green	State	1906	Paul L. Garrett	110	3,818	2,446	1,207	1,239	817	60,072			360,000	3,121,658	
LOUISIANA															
Centenary College of Louisiana, Shreveport	Methodist	1825	Pierce Clime	42	1,548	804	477	327	203	24,318	26,952	461,176	12,258	817,474	
Dillard University, New Orleans	Private	1930	A. W. Dent	28	220	349	130	219	126	23,000	10,714	309,000	117,507	1,462,477	
Louisiana College, Pineville	Baptist	1906	H. M. Weathersby	24	600	378	245	133	70	13,000	12,000			1,000,000	
Louisiana Polytechnic Institute, Ruston	State	1894	Claybrook Cottingham	124	2,774	2,245	1,259	986	859	22,000	57,346			3,000,000	
Louisiana State Normal College, Natchitoches	State	1885	Joe Farrar	104	2,866	1,915	755	1,160	864	38,000	47,000		768,096	3,184,239	
Louisiana State University and Agricultural and Mechanical College, University of Louisiana, New Orleans	State	1860	Gen. Campbell B. Hodges	603	14,278	8,301	5,390	2,911	696	269,733	116,425	14,555	4,839,383	20,246,442	
Loyola University, New Orleans	Catholic	1912	P. A. Roy	180	4,006	2,684	1,560	1,124	694	99,026	32,000	4,308,773	1,135	2,424,583	
Southern University, Scotlandville	State	1880	F. G. Clark	73	968	888	438	450	634	21,034	282		255,000	1,080,978	
Southwestern Louisiana Institute, Lafayette	State	1900	Joel L. Fletcher	130	2,639	2,517	1,507	1,010	1,247	37,104	37,101		855,000	3,600,000	
Tulane University of Louisiana, New Orleans	Private	1834	Rufus C. Harris	614	18,697	4,200	2,781	1,419	633	270,000		11,106,896	419,697	8,124,684	
Xavier University, New Orleans	Catholic	1915	Mother M. Agatha	79	783	876	428	448	14	31,797				1,100,000	
Bates College, Lewiston	Baptist	1864	Clifton D. Gray	53	5,161	749	446	303	185	74,942	28,910	1,875,152		1,256,818	
Bowdoin College, Brunswick	Private	1794	Kenneth C. M. Sills	58	9,000	638	638			186,000		8,330,000	322,000	3,789,000	
Colby College, Waterville	Baptist	1820	Franklin W. Johnson	56	4,600	704	449	255		100,000	46,000	2,964,065	407,000	2,806,000	
Maine, University of Orono	State	1865	A. A. Hauck	169	9,424	2,100	1,559	541	69	179,303	33,000	1,013,539	1,102,633	4,037,183	
MASSACHUSETTS															
Goucher College, Baltimore	Private	1885	David Allan Robertson	89	5,415	602		602		74,185	18,106	2,461,238	105,482	2,675,421	
Hood College, Frederick	Evangelical	1893	Henry I. Stahr	52	2,081	436		436		21,551	11,900	400,007	30,000	1,411,025	
Johns Hopkins University, Baltimore	Private	1876	Isaiah Bowman	811	12,992	5,073	3,537	1,436	814	568,064	261,027	30,354,242			
Loyola College, Baltimore	Catholic	1852	E. B. Bunn	38	1,051	405	405			31,000	9,493	88,577		1,093,240	
Maryland State Teachers College, Towson	State	1866	M. Theresa Wiedefeld	41	269	511	92	419	74	38,217	250			1,492,614	
Maryland, University of, College Park	State	1807	H. C. Byrd	936	36,000	10,116	6,552	3,564	559	142,000	123,000	1,915,000	1,737,000	11,800,000	
Morgan State College, Baltimore	State	1867	D. O. Holmes	26	1,088	770	265	505	404	31,109	13,500		80,833	1,211,825	
Mount St. Mary's College, Emmitsburg	Catholic	1808	J. L. Sheridan	35	292	290	2		43	45,000	22,616	263,910	11,864	1,421,022	
Notre Dame of Maryland, College of Baltimore	Catholic	1873	Sister Mary Frances	38	619	227	227		106	18,827	21,825	1,427,250		2,846,750	
St. Joseph's College, Emmitsburg	Catholic	1809	Sister Paula Dunn	37	703	192		192	32	13,902	3,600			2,525,000	
United States Naval Academy, Annapolis	Federal	1845	Rear Admiral R. Willson	350	14,655	2,400	2,400			85,000				38,000,000	

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Wayne University, Detroit	Municipal	1868	Frank Cody	15,366	15,398	8,004	7,394	1,869	2,615	141,046	70,582	\$ 3,040,490
Western Michigan College of Education, Kalamazoo, Michigan	State	1904	Paul V. Sangren	5,944	2,860	1,262	1,598	390	1,467	.....	53,994	33,420	.....	710,010	3,136,902
Bemidji State Teachers College, Bemidji	State	1919	Charles R. Sattigast	264	538	242	296	.....	275	.....	17,263	3,335	138,000	138,000	750,000
Carleton College, Northfield	Church	1866	Donald J. Cowling	4,370	958	437	410	12	.....	.....	130,835	101,352	3,587,866	76,302	3,929,482
Concordia College, Moorhead	Lutheran	1891	J. N. Brown	1,596	534	276	258	102	.....	.....	26,870	14,595	568,934	20,650	707,696
Duluth State Teachers College, Duluth	State	1895	Herbert Sorenson	575	821	296	525	173	594	.....	22,095	4,060	164,000	164,000	600,000
St. Augustin Adolphus College, St. Peter	Lutheran	1863	O. J. Johnson	614	614	366	248	.....	.....	.....	29,730	12,064	565,037	.....	863,551
Hamline University, St. Paul	Methodist	1854	Charles Nelson Pace	3,016	662	361	301	.....	.....	.....	41,000	13,069	1,948,620	73,356	980,769
Mankato College, St. Paul	Presbyterian	1886	Chas. J. Turk	2,356	694	356	338	.....	.....	.....	33,500	9,000	1,990,000	70,568	1,253,720
Minnesota State University of Mines, Duluth	State	1885	Walter C. Coffey	62,822	45,588	26,448	19,140	2,498	8,397	.....	1,183,620	556,975	17,295,221	13,564,964	40,662,421
Moorhead State Teachers College, Moorhead	State	1887	R. B. MacLean	.....	739	212	527	.....	370	.....	21,631	816	.....	.....	1,106,000
College of St. Benedict, St. Joseph	Catholic	1913	Mother Rosemond Pratschner	435	271	.....	271	.....	203	.....	30,000	5,076	.....	.....	668,097
St. Catherine, College of, St. Paul	Catholic	1911	Sister Eucharista	1,462	695	.....	695	19	250	.....	58,882	90,369	588,083	102,987	2,471,700
St. Mary's College, Winona	Catholic	1913	Brother Leopold	361	361	361	.....	.....	89	.....	25,000	7,000	1,250,000	.....	1,250,000
St. Olaf College, Northfield	Lutheran	1874	L. W. Boe	4,844	1,186	633	553	.....	.....	.....	50,200	39,215	954,109	158,556	1,900,678
St. Scholastica, College of, Duluth	Catholic	1894	M. Agnes Somers	587	454	.....	454	.....	102	.....	2,147	5,347	98,430	16,423	1,893,509
St. Teresa, College of, Winona	Catholic	1910	Sister Mary A. Molloy	960	779	.....	779	.....	313	.....	30,000	.....	500,000	.....	3,882,232
St. Thomas, College of, St. Paul	Catholic	1885	James H. Moynihan	2,659	847	847	.....	.....	.....	.....	32,518	48,122	322,500	114,554	2,147,109
State Teachers College, Mankato	State	1868	Frank D. McElroy	639	898	291	607	.....	581	.....	22,135	6,487	.....	178,000	3,500,000
State Teachers College, St. Cloud	State	1869	Geo. A. Selke	965	1,760	469	1,291	.....	812	.....	43,667	6,000	.....	235,000	900,000
State Teachers College, Winona	State	1858	O. Myking Mehus	9,558	855	230	625	.....	290	.....	23,000	4,829	.....	163,700	1,302,500
Blue Mountain College, Blue Mountain	Baptist	1873	Lawrence T. Lowrey	1,810	366	6	360	.....	204	.....	13,260	7,000	296,000	2,000	507,000
Delta State Teachers College, Cleveland	State	1924	W. M. Kethley	885	383	130	253	.....	218	.....	20,000	5,000	75,000	75,000	1,200,000
Millaps College, Jackson	Methodist	1892	M. L. Smith	4,000	804	464	340	.....	183	.....	30,000	15,000	758,081	10,000	929,076
Mississippi University of Mississippi, University of, Mississippi	State	1848	Alfred Benjamin Butts	6,959	1,473	1,036	437	36	475	.....	83,849	13,106	646,000	237,553	4,605,515
Mississippi College, Clinton	Baptist	1826	D. M. Nelson	2,883	505	446	59	.....	119	.....	26,000	8,825	.....	13,207	670,330
Mississippi Southern College, Hattiesburg	State	1912	J. B. George	2,335	947	284	663	.....	838	.....	24,000	13,624	.....	109,288	1,591,648
Mississippi State College, State	State	1878	G. D. Humphrey	6,644	2,116	2,008	108	140	1,059	.....	80,742	36,000	.....	260,017	5,316,096
Mississippi State College for Women, Columbus	State	1884	B. L. Parkinson	5,467	1,192	.....	1,192	.....	.....	.....	46,750	12,789	.....	154,404	3,000,000
Tougaloo College, Tougaloo, Mississippi	Congregational	1869	Judson L. Cross	255	155	72	83	5	8	.....	11,090	7,447	100,000	50,000	.....
Central College, Fayetteville	Methodist	1855	R. H. Ruff	1,950	579	333	246	66	112	.....	.....	19,873	1,152,765	11,182	1,626,314
Col. Warrenburg Teachers College, Warrenburg	State	1871	Geo. W. Diemer	.....	1,527	652	875	.....	1,280	.....	50,000	9,258	.....	263,249	2,000,000
Culver-Stockton College, Canton	Disciples of Christ	1853	Walker H. McDonald	986	296	163	133	.....	68	.....	27,000	14,053	1,019,993	187	518,027
Drury College, Springfield	Congregational	1873	James F. Findlay	2,001	458	240	218	54,000	11,000	1,055,881	4,500	687,029

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						Total	Men	Women	Rate	Volume	\$				
Nebraska State Teachers College, Kearney	State	1905	Herbert L. Cushing	56	1,387	1,519	384	435	4	696	41,640	\$ 21,290	\$ 178,810	\$ 1,098,257	
Nebraska State Teachers College, Peru	State	1867	W R Pate	55	1,249	580	261	319	...	409	42,500	8,205	128,742	1,195,000	
Nebraska State Teachers College, Wayne	State	1910	J T Anderson	53	1,208	1,006	381	621	4	733	23,118	4,652	137,473	1,245,560	
Nebraska Wesleyan University, Lincoln	Methodist	1887	Benjamin F Schwartz	44	2,620	422	202	220	66	137	31,506	13,965	974,372	629,748	
Union College, Lincoln	Adventist	1891	A H Rulkoeiter	34	957	443	209	234	98	98	29,500	1,471	22,873	327,453	
Nevada University of Reno	State	1874	L W Hartman	79	3,295	1,255	779	427	49	173	64,885	11,055	772,287	2,840,908	
New Hampshire State Teachers College, Hanover	Private	1769	Ernest M. Hopkins	310	23,058	2,522	2,441	...	81	...	515,184	148,000	1,933,635	7,525,000	
Keene State Teachers College, Keene	State	1909	Lloyd P. Young	55	332	384	97	287	226	226	22,797	5,349	88,058	1,500,000	
Plymouth Teachers College, Plymouth	State	1870	Ernest L Silver	30	259	212	26	186	179	179	18,000	...	...	500,000
New Hampshire University of Durham	State	1866	Fred Engelhardt	193	6,403	2,577	1,871	706	145	538	112,412	133,535	1,254,348	3,472,828	
Drew University, Madison	Methodist	1867	Arlo Ayres Brown	43	2,534	460	200	...	260	...	185,790	66,912	5,983,685	2,417,104	
Gargan Court College, Newark	Catholic	1908	W. A. Griffin	35	1,800	150	...	150	35	130	30,000	12,000	...	1,500,000	
New Jersey College for Women, Newark	State	1881	Allan R. Cullimore	99	1,465	1,200	1,196	4	118	46	17,000	19,047	89,512	1,059,478	
New Jersey State Teachers College, Elizabeth	State	1918	...	...	...	...	...	...	...	...	...	...	...	...
New Jersey State Teachers College, Jersey City	State	1922	Edgar F Bunce	30	538	405	95	310	163	163	24,350	9,400	145,824	1,250,000	
New Jersey State Teachers College, Newark	State	1929	Chris C. Rossey	37	371	404	73	331	...	...	19,071	6,448	166,200	1,432,750
New Jersey State Teachers College, Paterson	State	1913	Roy L. Shafer	41	1,005	744	114	438	192	192	36,381	3,772	234,517	667,000	
New Jersey State Teachers College, Trenton	State	1923	Clair S. Wightman	23	...	350	110	240	...	...	17,000	...	...	300,000
New Jersey State Teachers College, Upper Montclair	State	1855	Roscoe L. West	69	1,592	770	215	555	236	236	37,125	33,607	334,163	3,000,000	
Princeton University, Princeton	Private	1908	H. A. Sprague	51	2,345	667	223	444	488	440	40,075	21,822	383,588	1,640,000	
Rutgers University, Newark	State	1746	Harold W Dodds	412	28,000	2,707	2,707	...	302	280	1,100,000	237,500	1,000,000	...	
St. Elizabeth College of, Convent Station	Catholic	1766	Robert C. Clothier	400	15,482	3,919	1,941	1,020	208	750	325,000	520,755	1,958,078	19,925,000	
St. Peter's College, Jersey City	Catholic	1899	Sister Marie Jose Byrne	42	1,678	432	...	432	...	386	29,395	...	...	300,000
Seton Hall College, South Orange	Catholic	1878	Dennis J. Conroy	31	713	409	405	...	4	...	16,000	...	...	3,980,000
Stevens Institute of Technology, Hoboken	Private	1856	James F. Kelley	52	...	650	650	...	...	...	14,500	17,180	...	3,980,000
Upsala College, East Orange	Lutheran	1870	Harvey N Davis	86	3,600	1,041	620	421	152	152	30,000	30,000	2,642,951	400,000	
New Mexico University of Albuquerque	State	1893	Evald B. Lawson	31	1,200	460	269	191	...	...	22,000	21,958	150,000	25,000
New Mexico Highlands University, Las Vegas	State	1889	James Fulton Zimmerman	139	2,785	1,914	1,147	767	139	838	82,496	27,368	1,125,397	2,422,440	
New Mexico State Teachers College, Silver City	State	1893	Edward E. Jung	38	813	517	250	267	...	741	21,613	15,807	...	768,603	
		1893	H. W. James	46	941	360	190	173	...	167	26,981	8,989	7,255	151,882	506,409

NEW YORK

Adelphi College, Garden City	1886	Paul Dawson Eddy	55	3,809	606	606	2	96	34,775	\$ 21,375	\$ 43,150	\$ 8,361	\$ 2,319,526	
Alfred University, Alfred	1836	J. Nelson Norwood	70	2,995	605	259	5	259	60,650	61,348	1,816,103	61,348	1,816,103	
Brooklyn College, Brooklyn	1930	Harry D. Gideonse	695	10,869	8,727	6,501	1,351	2,871	90,000	31,400	2,044,756	7,687,928		
Brooklyn Polytechnic Institute of Brooklyn	1854	H S Rogers	57	3,137	4,268	4,288	660	595	23,400	15,164	1,675,379	7,505	1,943,264	
Buffalo, University of, Buffalo	1846	Samuel P. Capen	614	5,100	3,361	1,739	140	943	160,000	28,163	6,000,609	5,476	7,024,350	
Cansus College, Buffalo	1870	Timothy J. Coughlin	55	2,750	1,471	838	94	275	34,878	4,014	61,426		1,263,824	
City College, College of the City of New York, New York	1847	Harry N. Wright	983	29,553	24,177	5,376	3,676	6,660	259,008	26,484		3,714,397	13,167,376	
Ciason College of Technology, Fordham	1896	John A. Ross	40	1,508	610	610	99	62	10,466	16,918	1,200,000		730,000	
College University, Hamilton	1819	George B. Curtien	97	4,979	1,056	1,056			125,000	79,787	5,700,000	12,000	4,000,000	
Columbia University, New York	1754	Nicholas Murray Butler	3,420	132,339	30,197	13,175	17,022	2,660	1,710,062	451,750	14,936,015	59,163,262	14,936,015	
Cornell University, Ithaca	1865	Edmund E. Day	1,107	48,986	7,315	5,756	1,159	967	1,094,117	191,550	33,871,539	2,261,959	9,094,147	
D'Youville College, Buffalo	1908	Sister Grace of the Sacred Heart	30	1,075	320	306	320		20,000					
Elmira College, Elmira	1855	W S A Pott	50				306		50,100	9,725	864,745	12,290	1,659,000	
Fordham University, New York	1841	Robert I. Gannon	385	22,059	7,566	4,357	3,209	1,226	1,556	208,755	194,280	586,840	99,000	8,472,553
Good Counsel College, White Plains	1923	Mother M. Aloysia	35	506	194	194			12,000	2,200		5,000	1,090,000	
Hamilton College, Clinton	1812	William Harold Cowley	50	4,752	432	432			191,943	23,682	4,200,342	393,466	2,332,302	
Hobart College, Geneva	1822	William Alfred Eddy	52		380	378	2		107,137	27,000	1,344,525	30,125	1,051,700	
Houghton College, Houghton	1883	Stephen W. Faine	36	831	482	228	247	7	15,650	17,513	253,444	8,848	491,040	
Hunter College, New York	1870	George N. Shuster	388	26,516	13,436	335	13,101	198	2,838	132,445	5,522	6,447	15,850,000	
Keuka College, Keuka Park	1890	Henry E. Allen	20	816	222		222		11,782	13,899	321,234	36,366	1,048,817	
Manhattan College, New York	1863	Brother A. Victor	93	4,200	1,573	1,573			85,000	26,212			3,022,181	
Manhattanville College of the Sacred Heart, New York	1847	Grace C. Dammann	59	1,003	365		365		42,083	38,230	346,726		3,113,804	
Marymount College, Tarrytown-on-Hudson	1918	M. Gerard	38	1,297	224		224		15,000	1,000	800,000	66,000	1,882,900	
Mount St. Vincent College of Mt. St. Vincent-on-Hudson	1847	Francis J. Spellman	45	2,124	509		509		25,151	31,845	223,345	15,953	2,110,202	
Nasareth College of Rochester, Rochester	1924	Mother Rose Miriam	38	550	248		248		16,000	8,775				
New Rochelle, College of, New Rochelle	1904	Mother Thomas Aquinas	54	3,170	782		782		42,800	48,000			2,995,291	
New York University, New York	1831	Harry Woodburn Chase	2,249	86,912	43,671	27,572	16,099	8,605	8,062	619,259	512,840	8,607,473	15,269,874	
New York State College for Teachers, Albany	1844	John M. Sayles	94	8,541	1,204	360	702	142	1,170	30,954	24,864		409,298	
New York State Teachers College, Buffalo	1872	H W Rockwell	75	2,500	1,009	301	708	1,004	20,000	6,000		350,000	2,000,000	
Niagara University, Niagara Falls	1856	Joseph M. Noonan	107		1,478	1,347	131	133	50,000	41,643			2,390,000	
Rensselaer Polytechnic Institute, Troy	1824	William O. Hotchkiss	169	7,438	1,476	1,476	61	314	32,590	79,893	8,718,535	20,950	5,968,113	
Rochester University of Rochester	1850	Alan Valentine	283	10,256	1,813	914	797	488	376,660	275,221	51,821,181	171,286	31,119,246	
Russell Sage College, Troy	1916	James Laurence Meader	101	1,800	679		679		32,000	22,068	973,282	5,357	1,233,728	
St. Bonaventure College, St. Bonaventure	1859	Thomas Plassmann	69		402	402	63	324	47,755	40,000			99,652	
St. John's University, Brooklyn	1870	J. Walsh	234	864	8,112	6,668	1,444	220	61,192				939,000	
St. Joseph's College for Women, Brooklyn	1916	W. Dillon	44	1,234	469		469		18,000	6,200				
St. Lawrence University, Canton	1856	Millard Henry Jencks	68	900	726	431	295	5	76,421	187	2,278,708	12,464	2,796,319	
St. Rose, College of, Albany	1920	Edmund F. Gibbons	40		356		356		9,425	200		2,500	2,153,743	

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						Total	Men	Women					
Sarah Lawrence College, Bronxville	Private	1926	Constance Warren	58	218	291	291	0	36,890	\$ 1,716	\$ 476,201	\$ 51,185	\$ 1,932,334
Sitona College, Saratoga	Private	1911	Henry T. Moore	81	2,093	809	809	0	47,338	33,787	876,688	27,243	2,563,906
Syracuse University, Syracuse	Private	1870	William P. Graham	715	29,754	7,463	3,407	803	278,682	4,694,229	4,694,229	80,979	8,705,452
Union College, Schenectady	Private	1795	John R. Fox	80	9,361	769	769	5	111,722	92,397	4,545,001	3,334,190	52,000,000
United States Military Academy, West Point	Federal	1802	Major General Robert L. Eichelberger	281	8,889	1,843	1,843	0	109,000	0	0	0	0
Vassar College, Poughkeepsie	Private	1861	Henry Noble MacCracken	182	11,212	1,239	1,239	15	226,029	128,374	10,791,522	409,071	10,143,585
Wagner Memorial Lutheran College, Staten Island	Lutheran	1886	Clarence C. Stoughton	29	629	380	239	141	32,000	15,250	339,200	29,750	1,116,767
Wells College, Aurora	Private	1868	W. E. Weld	45	1,890	272	272	0	91,727	25,616	1,569,712	13,011	1,950,465
William Smith College, Geneva	Private	1912	William Alfred Eddy	52	0	187	187	0	107,137	0	0	0	0
North Carolina													
Appalachian State Teachers College, Boone													
State	1903	B. B. Dougherty	337	632	25,000	210,500	1,000	2,500,000					
Ansheville Normal and Teachers College, Asheville	Independent	1887	Frank C. Foster	32	1,175	331	1	330	15,850	1,590	11,590	365,000	
Bennett College, Greensboro	Methodist	1873	David D. Jones	31	389	380	0	48	14,380	14,380	36,191	1,116,733	
Catawba College, Salisbury	Evangelical	1851	Howard R. Omwake	35	1,114	495	250	186	18,000	13,184	386,520	4,901	589,967
Davidson College, Davidson	Presbyterian	1836	John R. Cunningham	45	1,114	689	682	7	40,000	12,500	2,250,000	120,000	1,800,000
Duke University, Durham	Private	1838	R. L. Flowers	478	10,779	3,716	2,569	1,147	650,000	381,455	35,000,000	0	30,000,000
East Carolina Teachers College, Greenville	State	1907	Leon R. Meadows	74	2,100	1,318	213	1,105	39,192	17,491	0	124,000	3,500,000
Greensboro College, Greensboro	Methodist	1838	Dr. L. L. Gobbel	35	1,233	443	0	443	21,592	20,150	467,054	9,853	643,076
Guilford College, Guilford	Friends	1837	Clyde A. Milner	28	1,205	407	237	170	22,875	11,500	690,965	24,390	540,787
Johnson C. Smith University, Charlotte	Presbyterian	1867	H. L. McCrorey	40	1,521	462	296	166	23,648	25,532	1,721,700	0	1,133,941
Lenoir Rhyne College, Hickory	Lutheran	1891	P. E. Monroe	33	1,500	579	281	298	17,900	111,378	698,219	8,725	621,451
Livingstone College, Salisbury	Methodist	1879	W. J. Trent	19	2,400	265	102	163	17,550	3,948	46,560	40,163	465,000
Methuën College, Raleigh	Baptist	1891	Carlyle Campbell	45	2,400	527	0	527	29,206	8,144	522,762	0	1,446,752
North Carolina University of Chapel Hill	State	1793	Frank P. Graham	331	12,733	4,341	3,696	645	275,000	113,000	2,801,000	961,060	13,357,000
North Carolina Agricultural and Technical College, Greensboro	State	1891	F. D. Bluford	76	0	958	684	274	30,000	15,000	0	120,000	2,000,000
North Carolina College for Negroes, Durham	State	1925	James E. Shepard	61	14	793	287	506	28,760	10,500	0	138,000	1,470,000
North Carolina State College of Agriculture and Engineering of the University of North Carolina, Raleigh	State	1889	J. W. Harnwell	213	5,000	2,688	2,660	28	59,120	49,529	320,000	365,000	7,000,000
Queens College, Charlotte	Presbyterian	1857	Hunter B. Blakely	38	435	435	0	0	18,072	4,335	0	532	658,000
Shaw University, Raleigh	Baptist	1865	Robert P. Daniel	40	2,667	974	184	306	16,748	10,692	336,856	12,297	667,100
St. Augustine's College, Raleigh	Catholic	1867	Edgar H. Goold	16	0	235	100	135	14,000	0	0	0	550,000
Salem College, Winston-Salem	Private	1772	Howard E. Rondthaler	44	1,446	360	4	356	22,000	500	448,878	66,145	1,102,831
Wake Forest College, Wake Forest	Baptist	1834	Thurman Kitchen	70	5,012	1,092	1,092	12	61,800	35,000	2,249,982	350,000	1,049,420
Western Carolina Teachers College, Cullowhee	State	1889	H. T. Hunter	52	746	642	244	398	15,820	7,453	0	92,740	1,586,498

Woman's College of the University of North Carolina, Greensboro	1892	W. C. Jackson	225	2,659	2,659	284	208	642	91,557	\$ 31,851	\$	305,000	\$ 7,500,000
Jamestown College, James-town, Dakota	1883	Barend H. Kroeze	30	1,018	442	234	208	30	15,500	30,300	1,072,006	35,000	784,667
North Dakota, University of Grand Forks	1883	John C. West	135	7,757	2,371	1,996	975	117	370	86,000	1,700,000	.....	2,831,000
North Dakota Agricultural College, State College	1890	Frank L. Eversull	135	4,207	2,286	1,633	653	39	216	64,164	115,000	.....	912,765
State Teachers College, Dickinson	1916	Chas. E. Scott	26	219	565	250	315	330	12,000	1,500	.....	188,969	666,000
State Teachers College, Mayville	1889	Cyril W. Grace	25	401	565	156	409	182	18,000	2,652	30,000	85,392	165,000
State Teachers College, Menomonie	1913	C. C. Swain	48	678	877	351	526	492	27,527	641	.....	279,798	1,000,000
State Teachers College, Valley City	1889	James E. Cox	50	899	951	296	655	363	26,407	2,902	.....	160,895	688,869
Akron, University of Akron	1870	H. E. Simmons	107	4,221	1,866	1,113	753	33	505	58,210	6,971	163,182	255,331
Antioch College, Yellow Springs	1853	Algeo D. Henderson	106	1,536	725	438	287	133	64,834	4,817	239,175	159,422	1,578,899
Ashland College, Ashland	1878	E. G. Mason	41	3,000	652	289	363	.....	19,500	8,100	419,576	28,316	517,127
Baldwin-Wallace College, Berea	1845	Louis Clinton Wright	52	3,005	838	386	452	140	33,000	48,350	1,813,000	172,950	1,950,142
Bowling Green, State University, Bowling Green	1910	Frank J. Prout	115	1,988	1,543	779	764	57	716	61,053	17,013	.....	477,032
Capital University, Columbus	1850	Otto Mees	79	1,594	821	443	378	223	33,450	3,023	608,516	2,878	1,250,000
Case School of Applied Science, Cleveland	1880	W. E. Wickenden	161	5,183	1,157	1,018	.....	105	251*	40,000	30,628	294,908	2,969,985
Cincinnati, University of Cincinnati	1819	Raymond Walters	739	28,742	11,617	7,496	4,121	628	1,091	511,974	90,428	9,862,817	417,055
Dayton, University of Dayton	1850	John A. Elbert	92	2,034	728	576	152	47	326	40,000	14,500	.....	1,500,000
Denison University, Granville	1831	Kenneth I. Brown	69	4,658	845	434	411	.....	145,000	66,000	3,238,500	60,200	3,363,000
Fenn College, Cleveland	1881	C. V. Thomas	66	3,730	3,269	471	471	.....	16,997	6,525	678,200	32,933	1,531,523
Findlay College, Findlay	1882	Homer R. Dunathan	24	839	401	254	147	40	20,000	5,871	458,035	60,056	530,358
Heidelberg College, Tiffin	1850	Clarence E. Josephson	37	2,316	448	230	218	.....	33,000	14,500	962,212	11,904	749,249
Hiram College, Hiram	1850	Paul H. Fall	27	2,410	326	180	146	.....	37,000	.....	1,112,092	27,784	995,445
John Carroll University, Cleveland	1886	E. C. Horne	52	1,373	1,106	783	323	25	155	33,353	6,921	2,500,000	12,246
Kent State University, Kent	1910	Karl C. Leebick	152	3,031	2,864	1,553	1,311	55	2,174	68,842	5,214	1,279,081	4,575,383
Kenyon College, Gambier	1824	Gordon Keith Chalmers	44	326	311	326	311	15	10	65,815	49,445	1,789,000	248,613
Lake Erie College, Painesville	1856	Heiden D. Bregdon	12	1,247	185	.....	185	5	29,825	11,290	818,500	5,000	1,289,000
Marietta College, Marietta	1797	Harry Kelo Evernull	38	2,544	413	283	180	16	119,056	13,900	1,274,861	5,000	1,090,813
Mary Mansie College, Toledo	1873	Sister M. C. Raynor	30	233	262	262	262	60	13,892	5,660	.....	300,000	.....
Miami University, Oxford	1809	A. H. Upham	239	8,536	3,474	2,059	1,415	56	166,000	74,309	110,000	15,736	6,698,193
Mount St. Joseph College, Mount St. Joseph	1920	Mother Mary Regina	41	987	268	.....	268	47	18,000	.....	635,000	.....	3,000,000
Mount Union College, Alliance	1846	C. B. Ketcham	45	3,415	679	396	283	151	65,000	19,522	1,508,045	5,000	1,013,000
Muskingum College, New Concord	1837	Robert N. Montgomery	69	3,200	701	334	377	148	35,000	27,001	908,683	26,797	1,852,225
Notre Dame College, South Euclid	1922	Mother Mary Evasista	37	456	203	.....	203	.....	19,800	2,000	.....	.....	1,136,000
Oberlin College, Oberlin	1833	Ernest Hatch Wilkins	201	15,859	1,467	824	643	.....	413,000	97,712	19,451,314	.....	8,111,655
Ohio State University, Columbus	1870	Howard L. Bevis	1,519	53,031	14,056	10,159	3,897	1,680	596,920	35,000	1,668,395	4,295,704	27,134,619
Ohio State University, Athens	1804	Herman G. James	250	9,762	4,620	2,480	2,140	291	127,630	29,721	85,814	1,815,339	6,000,000

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						Total	Men	Women			\$	\$		
Ohio Wesleyan University, Delaware	Methodist	1842	H J BURGSTALLER	106	12,814	1,507	705	802	24	161,019	\$ 58,521	\$ 3,761,495	\$ 146,195	\$ 2,904,244
Otterbein College, Westerville	Brethren	1847	J RUSKIN HOWE	51	2,983	536	313	223		29,565	33,088	1,283,727	40,990	786,421
St. Mary of the Springs College, Columbus	Catholic	1911	Sister M. Aloysie	33	915	148	148	195		23,000	8,500	23,000		1,500,000
Toledo, University of Toledo	Municipal	1872	Philip C. Nash	108	3,102	3,745	1,925	1,097	176	104,415	38,227	23,000		3,925,000
Ursuline College, Cleveland	Catholic	1854	Mother Marie	31	458	181	181	181		15,444				
Western College, Oxford	Private	1853	Mrs Alexander Thomson	40	297	297	295	2		41,800	19,358	910,621	8,233	1,241,264
Western Reserve University, Cleveland	Private	1826	Winifred G. Leutner	745	26,764	10,207	4,835	5,372	24,474	520,000	82,508	14,711,000	293,600	10,722,600
Wilberforce University, Wilberforce	State	1856	R. R. Wright, Jr.	78	1,338		656	682		20,503	17,726	78,100	306,125	2,074,245
Wilmington College, Wilmington	Friends	1870	S. A. Watson	22	1,866	301	149	152	251	17,000	13,617	310,250	9,170	400,000
Wittenberg College, Springfield	Lutheran	1845	Rees Edgar Tulloss	75	5,749	1,429	655	774	76	346	33,310	2,138,858	192,300	2,309,803
Woods College of Wooster	Presbyterian	1866	Charles F. Wishart	83	7,045	997	446	480	4	67	91,635	24,500	248,841	2,568,195
Xavier University, Cincinnati	Catholic	1831	Celestin J. Steiner	64	2,493	669	662	7		149	75,500	5,265	53,227	1,470,720
OKLAHOMA														
Central State College, Edmond	State	1891	R. R. Robinson	57	4,464	1,102	411	691	988	19,867	14,000	133,175		1,408,116
East Central State College, Ada	State	1909	A. Lunscheid	66	2,560	1,407	534	873	909	27,643	17,370			1,183,244
Northeastern State College, Tahlequah	State	1889	John Vaughan	56		1,389	618	771	1,128	30,076	17,161			965,794
Northwestern State College, Alva	State	1897	Chester O. Newlun	45	1,494	829	373	456	391	18,464	4,682		101,707	1,108,856
Oklahoma Agric and Mech. College, Stillwater	State	1891	Henry G. Bennett	351	11,199	7,649	4,698	2,951	341	2,460	135,000	233,930	1,159,889	6,600,000
Oklahoma College For Women, Chickasha	Disciples of Christ	1908	M. A. Nash	60	1,800	1,029		1,029		25,650	10,000		3,400	2,000,000
Phillips University, Enid	Disciples of Christ	1907	Eugene S. Briggs	40	2,178	938	479	459	93	246	38,384	27,754	672,947	425,040
Southeastern State College, Durant	State	1909	T. T. Montgomery	58	2,665	2,381				28,656	11,823		130,802	775,000
Southwestern Institute of Technology, Weatherford	State	1901	James B. Boren	92	4,644	1,114	568	546	730	31,612	7,000		110,746	935,527
The University of Tulsa, Tulsa	Private	1894	C. I. Pontius	71	895	895	555	340	8	58,982	22,399	1,231,613		1,441,544
Lindfield College, McMinnville	Baptist	1858	William G. Everson	41	1,573	514	269	245	89	38,000	46,500	1,000,000	15,000	678,350
Maryhurst College, Marysville	Catholic	1930	Sister Miriam Anna	27	222	271		271	15	18,615	20,085	50,000		367,021
Mt. Angel College, St. Benedict	Catholic	1887	James Koesler	40	168	140	85	55	25	26,000	6,200	96,000		850,000
Oregon University of Eugene	State	1872	Donald M. Erb	361	4,849	2,847	2,002	2,002	1,050	321,227	121,490	870,048	1,180,000	6,780,450
Orion State College, Corvallis	State	1868	Frank L. Ballard	468	13,707	5,089	3,358	1,731	341	182,105	175,521	260,799	3,104,677	8,676,510
Pacific University, Forest Grove	Congregational	1849	Walter C. Giersbach	26	1,100	342	208	134	44	30,000	4,405	287,634	3,900	499,546
Portland University of Portland	Catholic	1901	Charles C. Miltner	60	450	770	525	245	60	20,000	31,200	1,718,267	5,700	400,000
Reed College, Portland	Private	1911	Dexter M. Keizer	55	1,381	550	327	223	19	24	68,825	15,931	35,948	1,185,007
Willamette University, Salem	Methodist	1842	Dr. Bruce Baxter	48	809	809	470	339	18	35,000	10,000	1,700,000	107,500	900,000
PENNSYLVANIA														
Albright College, Reading	Evangelical	1856	Harry V. Masters	34	382	382	254	128	70	24,500	42,709	512,766	6,638	1,377,874
Allegheny College, Meadville	Methodist	1815	William Pearson Tolley	55	4,763	853	484	369	5	144,820	48,259	1,516,488	136,480	2,065,893

Bryn Mawr College, Bryn Mawr	Private	1880	Marion Edwards Park	94	4,279	666	163	666	175,000	\$100,313	\$ 6,712,853	\$ 56,146	\$ 4,603,382
Bucknell University, Lewisburg	Baptist	1846	Arnaud C. Marts	82	1,321	844	34	477	100,000	61,427	1,342,896	56,200	3,268,578
Carnegie Institute of Technology, Pittsburgh	Private	1905	Robert E. Doherty	416	2,408	1,592	74	816	30,000	111,241	17,500,000	120,000	8,000,000
Chestnut Hill College of Chestnut Hill	Catholic	1871	Sr. Maria Koetka	46	827	301	301	301	25,775	10,000	300,000	2,000	2,450,000
College Misericordia, Dallas	Catholic	1923	Sister Mary Pierre	45	794	536	341	536	17,160	1,100,000	1,100,000	2,000	2,450,000
Dickinson College, Carlisle	Methodist	1773	Fred P. Corson	40	10,680	548	412	136	66,000	39,750	1,400,000	17,700	1,625,000
Drexel Institute of Technology, Philadelphia	Private	1891	Park R. Kolbe	142	3,869	2,046	698	698	69,000	37,903	3,314,718	3,600	4,694,494
Duquesne University, Pittsburgh	Catholic	1878	Raymond V. Kirk	197	5,108	4,055	2,009	2,046	54,650	21,000			1,686,700
Franklin and Marshall College, Lancaster	Evangelical	1787	H. M. J. Klein	47	983	983	983	983	85,000	31,905	1,384,342	104,005	2,107,800
Geneva College, Beaver Falls	Presbyterian	1848	McLeod M. Pearce	37	2,500	502	307	195	33,000	25,925	635,985	6,638	1,007,124
Gettysburg College, Gettysburg	Lutheran	1832	H. W. A. Hanson	45	4,462	601	457	144	59,256	34,000	815,000	50,000	1,435,000
Grove City College, Grove City	Private	1876	Weir C. Kettler	53	4,221	934	517	417	40,000	16,212	848,760	45,637	3,108,223
Haverford College, Haverford	Friends	1833	Felix Morley	43	327	327	327	327	144,000	23,375	4,442,600	27,848	4,132,100
Immaculata College, Immaculata	Catholic	1920	Francis J. Furey	37	765	286	286	286	16,500	39,590			4,092,000
Junata College, Huntingdon	Brethren	1878	C. C. Ellis	41	549	261	261	288	50,000	13,000	715,000	26,486	850,000
Lafayette College, Easton	Presbyterian	1826	William Mather Lewis	103	8,409	924	924	924	102,000	51,100	3,982,000	50,960	4,638,876
La Salle College, Philadelphia	Catholic	1863	Rev. Brother E. Anselm	35	800	440	440	440	12,500	16,435		55,000	2,012,300
Lebanon Valley College, Annville	Brethren	1866	Clyde A. Lynch	36	2,674	626	317	309	24,083	19,631	919,670	8,388	702,045
Lehigh University, Bethlehem	Private	1865	C. C. Williams	197	9,338	2,093	1,770		249,156		8,000,000	75,000	5,977,901
Lincoln University, Lincoln	Presbyterian	1854	Walter L. Wright	27	2,792	389	389		36,500	18,100	1,055,904	33,230	783,673
Marywood College, Scranton	Catholic	1915	Mother M. Marcella	48	2,500	468	468	468	30,000	60,000			3,000,000
Mercyhurst College, Erie	Catholic	1926	Mother M. Borgia	37	385	241	241	241	15,000		1,500,000		1,000,000
Moravian College and Theological Seminary, Bethlehem	Moravian	1807	W. N. Schwarze	20	1,000	181	171		23,000		751,306	9,500	600,000
Mount Mercy College, Pittsburgh	Catholic	1929	Mother M. Irenaeus	36	340	369	369	369	20,000				
Muhlenberg College, Allentown	Lutheran	1848	Levering Tyson	40	3,355	546	546		60,000	46,170	990,860	35,750	1,720,100
Pennsylvania University of Philadelphia	Private	1740	Thomas S. Gates	1,662		16,414	11,919	4,495	935,000	35,189	22,423,774	1,266,712	35,147,987
Pennsylvania College for Women, Pittsburgh	Private	1869	Herbert L. Spencer	39	1,519	341		341	23,580	22,270	619,324	32,074	1,473,996
Pennsylvania State College, State College	State	1855	Ralph D. Hetzel	1,774	26,205	6,447	4,937	1,510	218,586	157,218	517,000	4,431,367	14,884,165
Pittsburgh University of Pittsburgh	Private	1787	John Gabbert Bowman	1,253	30,000	14,708	9,199	5,509	401,745	465,180	3,085,407	807,557	19,876,698
Rosemont College, Rosemont	Catholic	1922	Mother M. Cleophas	44	544	286	286	286	27,040	20,000	1,000,000	5,000	1,000,000
St. Francis College, Loretto	Private	1847	John P. Sullivan	26	1,287	232	232		18,000	10,000	1,200,000		
St. Joseph's College, Philadelphia	Catholic	1851	Thomas J. Love	38	483	483	483	22	15,100		91,129		2,483,770
St. Vincent College, Latrobe	Catholic	1846	Alfred Koch	52		456	456		64,000	11,200	2,479,041		1,758,918
Seranton University of Seranton	Catholic	1889	Brother Leonard	47	1,647	1,119	932	67	30,000	17,000	1,500,000		750,000
State Teachers College, State Teachers College	State	1883	James A. W. Reeves	57	1,057	709		475	30,000		500,000		2,066,584
State Teachers College, California	State	1839	Harvey A. Andrus	47	1,241	599	396	293	18,500	8,975			1,382,806
State Teachers College, California	State	1855	Robert M. Steele	49	9,050	631	341	290	17,000	5,800			880,000

UNIVERSITIES AND COLLEGES IN THE UNITED STATES (Continued)

Institution and Address	Control or Affiliation	Date of Founding	Chf/Executives	Faculty (num-ber)	Total Degrees Earned (since founding)	Enrollment for 1940-41	Grad-uate	School Year	Summer School	Valu-ables in Library	Student Aid 1940-41 (excludes NYA)	Total Endowment	Gifts and/or Appropriations 1940-41	Value of Plant
						Total	Men	Women	1940-41		\$	\$		
State Teachers College, Clinton	State	1867	Paul G. Chandler	27	...	307	135	172	...	20,000	7,000	...	\$ 87,000	\$ 1,750,000
State Teachers College, East Stroudsburg	State	1893	Daniel W LaRue	52	1,107	517	286	231	...	15,000	...	...	11,373	1,291,724
State Teachers College, Edinboro	State	1861	L H Van Houten	25	3,000	274	...	274	11	22,000	3,000	...	...	1,280,000
State Teachers College, Indiana	State	1875	LeRoy A King	104	11,707	1,448	408	1,040	305	23,000	5,420	...	195,216	3,094,810
State Teachers College, Kutztown	State	1866	Q A W Rohrbach	36	1,001	470	200	270	...	19,121	...	...	...	...
State Teachers College, Lock Haven	State	1870	J G Flowers	33	724	430	225	205	...	25,000	6,316	...	112,669	1,076,296
State Teachers College, Mansfield	State	1854	Wilms E Pratt	68	1,525	509	155	354	...	25,000	9,000	...	135,700	2,204,518
State Teachers College, Millersville	State	1854	Landis Tanger	45	1,300	550	244	306	...	24,271	3,000	...	117,000	1,947,637
State Teachers College, Shippensburg	State	1871	Albert Lindsey Rowland	43	1,090	491	229	262	...	23,000	9,000	...	...	2,210,454
State Teachers College, Shippery Rock	State	1889	Dale McMaster	54	...	572	221	351	...	23,112	7,930	...	...	2,210,000
State Teachers College, West Chester	State	1871	Charles S Swope	82	...	1,586	513	1,073	...	...	...	...	177,667	3,622,067
Susquehanna University, Selinsgrove	Lutheran	1858	J G. Morris Smith	33	1,998	342	179	163	...	17,000	20,000	410,000	16,000	806,000
Swarthmore College, Swarthmore	Private	1864	John Nason	110	5,002	765	399	366	...	119,000	83,000	7,892,198	41,640	4,146,278
Temple University, Philadelphia	State	1884	Robt. L. Johnson	804	...	11,893	7,307	4,586	1,223	166,497	274,340	110,013	32,568	7,477,015
The College, Greenville	Lutheran	1870	George H. Rowley	20	1,200	262	155	107	...	20,000	7,500	175,000	...	450,000
Uranus College, Collegeville	Evangelical Reformed	1860	N. E. McClure	44	2,200	582	322	260	...	30,000	94,000	650,000	...	1,500,000
Villanova College, Villanova	Catholic	1842	Edward V. Stanford	122	3,000	3,107	1,450	1,657	1,111	50,000	213,500	213,500	719,996	4,977,650
Washington and Jefferson College, Washington	Presbyterian	1780	Ralph Cooper Hutchison	45	6,536	665	555	...	10	59,549	40,328	1,556,143	57,581	1,757,645
Wilmington College, New Wilmington	Presbyterian	1852	Robert F Galbreath	51	3,669	714	347	367	...	20,000	59,541	606,855	60,195	1,326,442
Wilson College, Chambersburg	Presbyterian	1869	Paul Swan Havens	51	2,774	372	...	372	...	48,000	44,742	819,246	24,110	1,137,938
Brown University, Providence	Baptist	1764	Henry Merritt Wriston	275	17,100	2,293	1,408	502	321	589,000	79,193	11,575,000	500,000	7,774,068
Providence College, Providence	Catholic	1919	John J Dillon	65	1,846	856	...	...	185	31,427	4,500	65,000	5,500	2,500,000
Rhode Island State College, Kingston	State	1892	John Barlow	134	3,000	1,236	877	323	26	59,261	12,000	...	245,000	4,969,154
Source CASOWIA	State	1870	J J. Starks	26	...	505	222	283	...	18,500	7,090	134,316	17,451	400,000
Benedict College, Columbia	Baptist	1870	J J. Starks	26	...	505	222	283	...	18,500	7,090	134,316	17,451	400,000
Charleston College of Charleston, Citadel	Municipal	1770	Harrison Randolph	20	1,425	409	193	216	...	30,229	1,902	459,000	65,000	1,762,862
College of South Carolina, Charleston	State	1842	Gen C P Sumner	80	3,062	1,348	...	...	...	26,500	7,000	...	150,180	4,000,000
Clemson Agricultural College, Clemson	State	1893	R F. Poole	157	5,919	2,381	...	...	755	56,000	12,794	...	387,385	5,223,824
Coker College, Hartsville	Baptist	1894	C Sylvester Green	32	910	261	...	...	41	19,000	3,000	750,000	15,000	...
Columbia College, Columbia	Methodist	1854	J. Caldwell Guilds	30	3,520	347	...	...	...	15,287	7,970	483,184	...	630,531
Converse College, Spartanburg	Private	1889	E. M Gwathmey	42	2,313	441	18	423	3	29,600	22,095	630,320	1,169,594	...
Erskine College, Due West	Presbyterian	1839	R C Grier	26	...	368	204	164	...	22,000	...	356,000	18,000	617,000

Furman University, Greenville.....	Baptist	1826	John Laney Plyler	68	3,069	1,030	536	485	9	340	40,000	\$ 35,259	\$ 801,222	\$ 3,000	\$ 2,119,846
Limestone College, Gaffney	Baptist	1845	R. C. Granberry	36	2,262	342	253	342	69	113	20,150	5,000	489,000	10,000	610,000
Newberry College, Newberry	Lutheran	1856	Jas. C. Kinard	26	2,262	538	253	285	...	...	20,000	24,000	832,000	18,829	1,454,885
South Carolina University of Columbia.....	State	1801	James Rion McKissick	116	7,855	2,004	1,295	709	75	751	130,000	40,000	.....	323,617	4,421,516
South Carolina State Agricultural and Mechanical College, Orangeburg.....	State	1896	M. F. Whitaker	80	1,300	1,004	514	490	.....	1,041	14,612	10,000	200,433	10,000	1,337,000
South Carolina College for Women, Rock Hill.....	State	1886	Shelton Phelps	85	8,030	1,850	483	1,850	10	567	62,391	6,000	797,832	8,859	744,675
Widow's College, Spartanburg	Methodist	1851	H. N. Snyder	26	3,172	483	483	.....	.....	101	37,586	.....	.....	.....	.....
South Carolina State Agricultural College, Sioux Falls.....	Lutheran	1860	C. M. Granskou	35	756*	514	275	239	.....	134	13,000	9,100	441,636	21,300	378,810
Dakota Wesleyan University, Mitchell	Methodist	1853	Joseph H. Edge	30	1,045	375	178	150	47	27	27,910	18,000	600,000	.....	550,000
Huron College, Huron	Presbyterian	1883	Geo F. McDougall	24	787	187	115	72	28	69	22,833	8,258	802,453	17,366	556,786
Northern State Teachers College, Aberdeen	State	1901	N. E. Steele	51	.....	919	340	579	.....	453	25,000	9,176	9,000	114,500	1,100,000
South Dakota University of Vermillion.....	Public	1882	I. D. Weeks	95	4,747	891	580	311	46	319	105,000	17,397	.....	261,000	2,634,934
South Dakota State College of Agriculture and Mechanic Arts, Brookings	State	1881	Lyman E. Jackson	141	4,040	1,774	1,227	547	30	273	71,300	3,500	556,272	745,121	3,145,161
South Dakota State School of Mines, Rapid City	State	1885	Joseph Peter Connolly	33	941	377	354	23	3	.....	16,000	6,068	139,649	139,649	971,288
Yankton College, Yankton	Private	1881	J. L. McCorsion, Jr.	42	1,233	442	209	233	.....	91	40,552	23,988	784,307	10,563	668,719
TENNESSEE															
Carson-Newman College, Jefferson City.....	Baptist	1851	James T. Warren	33	2,000	481	218	263	.....	43	20,000	17,527	541,794	22,800	484,570
Chattanooga University of Chattanooga	Methodist	1866	Archib M. Palmer	54	1,866	685	385	300	192	188	50,000	38,255	787,000	26,000	1,450,000
Fisk University, Nashville	Cong. Chr.	1866	Thomas E. Jones	40	2,169	504	206	298	78	.....	67,265	12,950	2,609,548	172,533	1,347,950
George Peabody College for Teachers, Nashville	Independent	1785	S. C. Garrison	109	11,000	1,284	591	683	581	2,574	150,000	10,000	5,421,000	145,000	3,921,000
Knoxville College, Knoxville	Presbyterian	1875	John A. Cotton	38	810	304	137	167	50	84	15,000	8,517	600,000	10,000	600,000
Lane College, Jackson	Methodist	1882	J. F. Lane	25	1,020	835	191	397	.....	247	12,000	5,115	25,000	.....	500,000
LeMoine College, Memphis	American Missionary Assn.	1870	Fred K. Bromlee	25	.....	400	.....	.....	.....	90	14,614	.....	.....	.....	.....
Lincoln Memorial University, Harrogate	Private	1890	Stewart W. McClelland	30	1,069	621	260	191	.....	170	17,804	39,515	830,021	43,678	1,108,491
Maryville College, Maryville	Presbyterian	1819	Ralph Waldo Lloyd	56	.....	813	365	448	.....	.....	48,828	76,129	1,830,065	78,085	871,545
South University of the Seawane	Episcopal	1857	Alexander Guerry	32	.....	353	353	.....	.....	.....	53,003	.....	1,746,000	.....	1,379,000
Southwestern University, Memphis	Presbyterian	1848	Chas. E. Diehl	39	1,474	493	291	202	.....	124	48,843	21,710	480,237	62,076	1,507,865
State Teachers College, Johnson City	State	1911	Charles C. Sherrord	52	1,232	1,175	460	715	.....	601	31,000	6,800	.....	110,000	1,300,000
State Teachers College, Memphis	State	1912	Richard C. Jones	64	1,650*	1,614	721	893	135	534	26,000	2,570	.....	.....	1,250,000
State Teachers College, Murfreesboro	State	1911	Q. M. Smith	53	1,628*	1,029	477	552	.....	647	27,000	4,250	.....	.....	1,000,000
Tennessee University of Knoxville	State	1794	James D. Hoekins	233	14,583	5,829	3,548	2,281	319	1,995	176,152	55,346	491,784	1,821,810	10,747,359
Tennessee Agricultural and Mechanical College, Nashville	State	1912	W. J. Hale	61	1,611	1,512	537	975	.....	617	42,000	24,732	.....	.....	138,764
Tennessee State Teachers College, Nashville	State	1916	William Everett Derruberry	46	796	1,000	630	370	.....	241	20,000	.....	1,005,000	125,000	900,000
Tennessee Polytchnic Institute, Cookeville	State	1794	Charles A. Anderson	24	2,000	330	162	168	.....	.....	18,000	8,000	.....	20,000	581,000
Tusculum College, Greeneville	Presbyterian	1872	O. C. Carmichael	436	14,313	1,845	1,322	523	238	.....	391,897	74,632	25,191,285	.....	7,792,563
Vanderbilt University, Nashville	Private	1872	O. C. Carmichael	436	14,313	1,845	1,322	523	238	.....	391,897	74,632	25,191,285	.....	7,792,563

St. Mary-of-the-Wasatch, College of, Salt Lake City.....	1926	Sister Mary Agnes.....	20	99	198	.....	198	.....	86	12,501	\$ 6,150	\$	\$ 5,000	\$ 800,000
Utah University of, Salt Lake City.....	1850	LeRoy E. Cowles	213	10,955	4,632	2,984	1,648	187	816	155,934	100,106	690,557	585,682	.....
Utah State Agricultural College, Logan.....	1888	E. G. Peterson	175	6,132	3,838	2,629	1,209	183	712	76,318	106,716	..	802,879	3,434,000
VERMONT														
Bennington College, Bennington.....	1932	Lewis Webster Jones	54	301	282	..	282	..	134	21,000	7,682	100,093	48,469	1,410,468
Middlebury College, Middlebury.....	1800	Paul D. Moody	65	5,154	793	429	356	8	788	131,000	43,450	4,256,033	26,993	2,592,431
Norwich University, Northfield.....	1819	John M. Thomas	42	1,945	465	465	465	50	33,407	19,626	738,987	..	77,652	1,287,015
St. Michael's College, Winooski Park.....	1903	James H. Petty	24	785	255	215	40	2	40	20,000	4,000	78,000	..	500,000
Vermont University of, and State Agricultural College, Burlington.....	1791	John S. Mills	271	11,008	2,395	1,123	1,272	34	1,022	155,000	121,933	..	..	.....
VERMONT														
Bridgewater College, Bridgewater.....	1880	Paul H. Bowman	27	870	275	163	112	112	112	20,000	24,027	435,076	3,586	500,502
Emory & Henry College, Emory.....	1836	J. N. Hillman	19	1,900	291	197	94	129	129	22,000	18,397	315,395	8,500	494,433
Hampton Institute, Hampton.....	1868	M. S. MacLean	300	1,691	925	558	367	613	613	64,016	136,363	9,828,553	142,069	3,600,000
Hamden-Sydney College, Hamden-Sydney.....	1775	Edgar G. Gammon	22	397	397	397	397	397	397	18,000	18,111	378,784	38,143	769,602
Hollins College, Hollins College.....	1842	Bessie C. Randolph	45	1,273 *	342	342	342	342	342	33,860	6,816	448,294	11,306	1,408,522
Lynchburg College, Lynchburg.....	1903	R. B. Montgomery	22	842	274	157	157	117	41	18,000	5,986	291,072	9,127	552,041
Madison College, Harrisonburg.....	1908	Samuel P. Duke.....	85	2,167	1,306	16	1,290	685	685	30,171	23,341	.....	102,630	.....
Mary Baldwin College, Staunton.....	1842	L. Wilson Jarman	31	507 *	327	..	327	.....	.....	26,282	6,255	598,900	60,000	701,676
Mary Washington College, Fredericksburg.....	1908	M. L. Combs.....	156	..	1,624	30	1,594	585	585	36,000	20,000	25,000	125,000	3,774,700
Randolph-Macon College, Ashland.....	1830	J. Earl Moreland	18	1,712	313	308	308	5	..	34,382	19,250	963,612	3,700	582,431
Randolph-Macon Woman's College, Lynchburg.....	1893	Theodore H. Jack	74	3,808	674	674	674	674	674	52,000	40,291	1,246,130	..	2,019,577
Richmond University of, Richmond.....	1892	F. W. Boatwright	95	5,000	2,026	1,525	501	49	328	95,000	60,000	2,813,869	35,000	2,695,010
Roanoke College, Salem.....	1842	Chas. J. Smith.....	24	1,477	366	282	84	..	160	22,000	12,200	663,000	38,000	724,000
State Teachers College, Farnville.....	1884	J. L. Jarman	53	1,814	935	..	935	..	447	34,418	8,000	..	158,800	1,716,200
State Teachers College, Radford.....	1910	David W. Peters	57	1,296	581	..	581	..	898	25,749	15,803	..	120,225	1,200,000
Sweet Briar College, Sweet Briar.....	1901	Meta Glass	52	1,477	456	..	456	83	..	54,000	24,347	576,874	56,363	1,598,453
Virginia University of, Charlottesville.....	1819	J. L. Newcomb	366	14,090	2,992	2,640	67	285	1,723	360,000	230,087	11,514,255	614,019	9,865,392
Virginia Military Institute, Lexington.....	1839	Chas. E. Kilbourne	58	4,676	735	735	735	..	.....	59,088	116,926	271,503	171,228	2,826,183
Virginia Polytechnic Institute, Blacksburg.....	1872	Julian A. Burruss	587	7,179	2,913	2,865	148	229	791	91,333	35,740	349,300	764,922	8,400,000
Virginia State College for Negroes, Extrem.....	1882	John M. Gandy.....	91	1,587	1,172	482	620	20	655	29,745	35,983	173,000	198,627	2,311,585
Virginia Union University, Richmond.....	1865	J. M. Ellison.....	45	1,567 *	1,030	356	674	..	336	30,045	8,511	876,100	5,292	650,610
Washington and Lee University, Lexington.....	1749	Dr. Francis P. Gaines	65	5,746	941	936	.....	5	.....	123,000	2,000	3,035,695	33,625	2,892,131
William and Mary College of, Williamsburg.....	1693	John Stewart Bryan	104	.....	1,276	598	678	14	525	220,000	60,000	1,327,376	235,319	7,500,000
WASHINGTON														
Washington State University, Pullman.....	1890	Robert E. McConnell.....	61	652	876	363	513	549	33,550	17,390	263,000	1,650,000

UNIVERSITIES AND COLLEGES IN THE UNITED STATES (Continued)

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						Men	Women				\$			
Eastern Washington College of Education, Cheney	State	1890	Ralph E. Tjeje	58	1,068	1,732	558	1,174	39	832	53,500	\$36,338	\$272,000	\$1,403,722
Gonzaga University, Spokane	Municipal	1887	Leo J. Robinson	100		891			10	300	45,000			
Holy Names College, Spokane	Catholic	1907	Sister Esther Mary	28	96*	198				235	13,000		3,000	300,000
Pacific Lutheran College, Parkland	Lutheran	1894	O. A. Tinglestad	33	25*	523	240	283		137	20,000	533	24,722	356,469
Puget Sound College of Tacoma	Methodist	1888	Edward H. Todd	44		1,048	381	467	26	232	39,000	15,000	25,000	1,000,000
St. Edward's Seminary, Seattle	Catholic		T. C. Mulligan											
St. Martin's College, Lacey	Catholic	1895	Lambert Burton	35	21*	258	228	30			16,950	4,986		710,421
Seattle College, Seattle	Catholic	1892	Francis E. Corkery	105		1,400	720	680	50	300	35,000			
Seattle Pacific College, Seattle	Methodist	1891	C. Hoyt Watson	33	462	451	177	274		78	15,000	24,350		228,000
Walla Walla College, College Place	Adventist	1892	George W. Bowers	40	777	652	337	315	9	120	17,000	65,000	30,000	401,653
Washington State College of Pullman	State	1890	E. O. Holland	251	11,462	4,274	2,674	1,306	294	874	345,000	198,584	4,580,589	6,480,268
Washington University of Seattle	State	1861	Leo Paul Sieg	460	41,342	11,913	7,445	4,468	1,031	3,658	451,436		635,000	18,462,000
Western Washington College of Education, Bellingham	State	1893	W. W. Haggard	67	568*	1,020	428	592		674	53,236	9,500	274,175	1,500,000
Whitman College, Walla Walla	Private	1859	W. A. Bratton	44	2,133	625	327	284	14		71,500	18,500	38,884	578,734
Whitworth College, Spokane	Presbyterian	1890	Frank F. Warren	28		260	119	141	22	55	14,000	11,000	19,920	234,379
Wash. Virginia														
Bethany College, Bethany	Disciples of Christ	1840	W. H. Cramblet	35	2,604	394	214	180			34,456	12,697	4,276	1,070,626
Concord State Teachers College, Athens	State	1875	J. F. Marsh	40	840	586	220	366		602	15,000		283,410	1,250,000
Fairmont State Teachers College, Fairmont	State	1867	Joseph Roemer	42	1,252	624	324	300		467	23,437	900	8,000	991,000
Glenville State Teachers College, Glenville	State	1872	E. G. Robrbrough	24	660*	740	296	444		371	17,970	6,172	227,758	645,000
Marshall College, Huntington	State	1837	James E. Allen	116	3,421	1,838	896	942	104		45,000	10,486	328,000	3,725,000
Shepherd State Teachers College, Shepherdstown	State	1872	W. H. S. White	23	810*	300	140	160		260	17,300	1,200	9,050	500,000
West Liberty State Teachers College, West Liberty	State	1838	Paul N. Elbin	24	550	290	118	172	52	241	18,000	6,707	76,167	750,000
West Virginia University, Morgantown	State	1867	Charles E. Lawall	273	12,585	3,474	2,446	1,028	280	1,336	171,500	55,562	2,360,895	8,500,000
Beloit College, Beloit	Congregational	1846	Irving Maurer	54	3,673	579	310	269	7		125,219	14,500	75,503	1,403,297
Carroll College, Waukesha	Presbyterian	1846	G. T. Vander Lugt	31	2,000	550	343	207	92	40	21,600	17,889	171,396	905,176
Central State Teachers College, Stevens Point	State	1894	William C. Hansen	50	1,203	1,071	429	642		494	35,721			946,550

UNIVERSITIES AND COLLEGES IN THE UNITED STATES (Continued)

Institution and Address	Control or Affiliation	Date of Founding	Chief Executive	Faculty (number)	Degrees Earned (since founding)	Total Enrollment	Enrollment for 1940-41	Graduate School	Summer School	Volunteers in Library (NYA)	Student Aid 1940-41 (exclude NYA)	Total Endowment 1940-41	Gifts and/or Appropriations 1940-41	Value of Plant
Lawrence College, Appleton, Wis.	Private	1847	Thomas N. Barrows	70	3,904	707	345	362	..	65,159 \$	25,928	\$1,521,000	50,688 \$	2,360,450
Marquette University, Milwaukee	Catholic	1864	Raphael C. McCarthy	416	12,585	4,980	3,385	511	980	124,084	22,075	2,042,546	31,949	5,096,254
Milwaukee-Dowder College, Milwaukee	Private	1851	Lucia R. Briggs	49	1,887	317	..	317	..	44,553	9,325	2,084,287	12,272	1,694,444
Mount Mary College, Milwaukee	Catholic	1913	Edward A. Fitzpatrick	68	726	889	..	889	759	22,375	18,686	2,044	..	1,529,683
Ripon College, Ripon, Wis.	Congregational	1851	Silas Evans	36	2,200	505	344	161	..	37,709	16,500	896,428	..	712,483
St. Norbert College, W. De Pere	Catholic	1900	B. H. Pennings	62	..	840	383	127	330	23,000	..	..	..	..
State Teachers College, Eau Claire	State	1916	W. R. Davies	46	867	700	328	372	416	26,567	2,221	..	..	516,460
State Teachers College, La Crosse	State	1909	Rexford S. Mitchell	58	1,097	839	384	455	435	24,732	3,907	..	..	1,415,931
State Teachers College, Milwaukee	State	1880	Frank E. Baker	93	2,000	1,486	495	991	1,940	60,000	..	..	..	1,000,000
State Teachers College, Oshkosh	State	1871	Forrest R. Polk	50	1,152	1,014	461	553	10	34,000	1,786	..	197,793	160,000
State Teachers College, Platteville	State	1866	A. M. Royce	44	1,203	682	360	322	3	27,000	2,771	..	148,847	722,000
State Teachers College, River Falls	State	1874	J. H. Ames	45	882	669	402	267	324	23,000	3,500	..	173,789	855,950
State Teachers College, Superior	State	1898	Jim Dan Hill	58	..	769	369	410	..	31,188	2,000	..	221,660	1,024,842
Stout Institute, Menomonie, Wis.	State	1893	B. E. Nelson	46	2,055	640	345	295	192	455	23,831	..	..	1,250,000
Wisconsin, Univ. of, Madison	State	1848	Clarence A. Dykstra	1,736	56,294	12,012	8,107	3,905	4,672	1,100,000	451,269	1,693,251	11,197,362	22,852,531
Wyoming, University of, Laramie	State	1887	J. L. Morrill	177	3,838	2,275	1,485	790	102	104,962	123,823	3,987,479	..	3,264,491

* Degree granting privileges were gained subsequent to the date of founding, which accounts for the relatively small total.

† In the absence of a later report from the institution, figures have been taken from *American Universities and Colleges*, published by the American Council on Education in 1940.

‡ Acting president.

§ Includes the Atlanta University School of Social Science.

¶ In affiliation with Atlanta University.

‡ Statistics include Marycrest College.

§ Stated under the University of Louisville.

¶ Approximately 400 members of Harvard faculty on part time.

‡ Records lost prior to 1850.

§ Included under Rutgers University.

¶ Includes Barnard College and Teachers College except in amount of student aid.

‡ Included under Hobart College.

§ Records lost prior to 1925.

¶ All data apply to the school year 1939-40.

existing junior colleges are exclusively for Negro students, one for Indians. Of the privately controlled group, 39 are for men, 113 for women, and 196 coeducational. All but three of the publicly controlled institutions are coeducational. California has a position of outstanding leadership with 61 junior colleges and 109,000 students. Los Angeles City College is the largest junior college in the country in terms of full-time regular students, numbering 7,400. Sacramento Junior College, California, has 14,000 students, 11,000 of whom are adults in the community taking special part-time work. Increasing attention is being given to the development of so-called terminal courses on the semiprofessional level designed better to prepare students for remunerative employment and for constructive citizenship.

The table (p. 686-707) lists the accredited colleges and universities of the United States with statistics supplied by the institutions for the academic year 1940-41 (unless otherwise noted in footnotes). The list includes those institutions which are accredited (according to the 1941 *Educational Directory*) by one of the seven national or regional accrediting associations, namely the Association of American Universities (national), the New England, Middle States, North Central, Southern, and Northwest Associations of Colleges and Secondary Schools (regional), and the American Association of Teachers Colleges (national).

For comment on enrollments for the 1941-42 school year, see EDUCATION. See also the section on *Education* under the various countries. See DENTISTRY; FAIRS, EXPOSITIONS, AND CELEBRATIONS; ROMAN CATHOLIC CHURCH. For donations and grants, see PHILANTHROPY; CARNEGIE ENDOWMENTS, GENERAL EDUCATION BOARD; ROCKEFELLER FOUNDATION.

URUGUAY. A South American republic. Capital, Montevideo.

Area and Population. Area, 72,153 square miles; population, estimated at 2,146,545 on Jan. 1, 1940. The inhabitants are almost entirely of European descent, with Spanish, Italian, and Portuguese strains predominating. The language is Spanish. During 1940 2,291 foreigners entered the country from overseas and 1,390 departed. The population of Montevideo, with suburbs, was estimated at 770,000 in 1941. Paysandú had about 40,000 in 1940; Salto, 35,000; Mercedes, 24,000.

Defense. A bill for the establishment of compulsory military training was passed in July, 1940. As of Nov. 1, 1940, the active army totaled 8,093 men, the air force 463, and trained army reserves 26,300. During 1940 some 70,000 men registered for voluntary military training. There were about 5,000 men in the police force. The navy consisted of 1 old torpedo gunboat, 1 survey ship, 3 patrol vessels, and a few minor craft. See *History*.

Education and Religion. Although primary education is both compulsory and free, nearly 35 per cent of the adult population remains illiterate. Primary enrollment in 1940 was 191,261 pupils in 1,561 public schools, about 21,000 pupils in over 170 private schools, and 9,785 in courses for adults in 65 public schools. There were about 16,500 pupils in secondary schools, 470 students in normal schools, and nearly 20,000 students in the University of the Republic in Montevideo. The majority of the people profess the Roman Catholic faith, but there is complete religious freedom and no state church.

Production. Processing and manufacturing industries normally account for about 59 per cent of the

total value of national production, pastoral industries for 24 per cent, and agriculture for about 12 per cent. Leading manufacturing lines, in order of value of production in 1936, are meat packing, flour mills, bakeries, electric plants, building construction, distilleries, wineries, woolen mills, tobacco products. At the 1937 livestock census there were 8,296,890 cattle, 17,931,327 sheep, 600,000 horses, and 308,000 swine. Animal products account for over 90 per cent of all exports (wool for 49.1 per cent in 1940). Wool exports for the 1940-41 season totaled 117,269 bales, of which 103,379 went to the United States. Estimated yields of the chief crops in 1940-41 were (in metric tons): Wheat, 173,437, flaxseed, 66,977; oats, 31,517, barley, 9,092; canary seed, 585. Corn, rice, and potatoes are widely grown.

Foreign Trade. Imports in 1940 totaled 74,773,000 pesos (65,364,000 in 1939), exports, 110,473,000 (101,366,000 in 1939). Values of the principal 1940 exports were (in pesos): Wool, 54,289,483; meats and extracts, 24,357,391, hides and skins, 10,033,342; flaxseed, 7,433,996, live animals, 5,043,304. The United Kingdom supplied 18.5 per cent of the 1940 imports (18.2 in 1939), United States, 16.3 (5.2); Argentina, 13.5 (6.7), Germany, 1.4 (16.8). Of the 1940 exports, the United States took 25.8 per cent (13.9 in 1939); United Kingdom, 20.8 (18.5), Germany, 2.0 (12.1).

Finance. Budget estimates for 1941 were: Receipts, 100,326,000 pesos, expenditures, 105,164,000. In 1940 actual receipts were 95,443,164 pesos (preliminary) and expenditures 101,011,377 pesos. As a result of loan issues to cover successive budget deficits and other requirements, the national consolidated debt increased from 350,170,089 pesos on Dec. 31, 1938, to 410,949,851 pesos on Dec. 31, 1940. There was in addition a floating debt of 19,138,418 pesos on Dec. 31, 1940. Average exchange rates of the peso in 1940 were: Free, \$0.3755 (\$0.3626 in 1939), controlled free, \$0 5267 (\$0.4995 in 1939).

Transportation. In 1941 there were about 1,900 miles of standard-gauge railway lines open for traffic, 22,487 miles of roads including some 1,500 miles of good paved highways (see ROADS AND STREETS), air lines linking Montevideo with the other chief cities of Uruguay and North and South America, and an extensive network of navigable waterways. Commercial air routes in 1940 covered 1,313 miles within Uruguay. During 1939, 1,026 ocean-going vessels and 943 river steamers entered Uruguayan ports. The Uruguayan merchant marine on July 1, 1939, consisted of 247 vessels with a gross tonnage of 35,952.

Government. The Constitution of May 18, 1934, vested executive power in a President aided by a Council of Ministers, and legislative power in a Senate of 30 and a Chamber of Deputies of 99 members, elected by popular male and female suffrage for four years. The Senate seats were divided equally between the two political parties receiving the highest number of votes in a presidential election. The legislators proclaimed as President for four years the candidate chosen by the voters from the political party polling the highest vote. His cabinet of nine members was selected from the two strongest parties. President in 1941, Gen. Alfredo Baldomir (Colorado party), who assumed office June 19, 1938. His cabinet contained six Colorados and three Blancos. The composition of the Chamber elected Mar. 27, 1938, was: Colorados, 64; Blancos (Herreristas), 29; Socialists, 3; Catholics, 2; Communists, 1. In the Senate there were 15 Colorados and 15 Blancos.

HISTORY

Internal Politics. The determination of Uruguay's role in the world conflict between the Axis and anti-Axis powers was the major preoccupation of the republic during 1941. The Government and the great majority of the Uruguayan people supported the democratic cause and favored active collaboration with the United States and Great Britain. But they were obstructed in carrying this policy into effect by the active opposition of a pro-Axis minority, whose principal spokesman was Senator Luis Alberto de Herrera, leader of the official Blanco, or National Herrerista, party. Due to the peculiarities of the 1934 Constitution (see above under *Government*), the Blancos held a more or less effective veto power over the Government's program in both foreign and domestic affairs.

The internal political crisis that developed in 1940 as a result of Herrerista opposition to the development of inter-American defense bases in Uruguay with United States aid (see *YEAR BOOK* for 1940, p. 788 f.) appeared to have ended on Jan. 1, 1941. It was then announced that the Herrerista party had withdrawn its opposition to the construction of defense bases and that as a result the three Herrerista members would remain in the Cabinet. President Baldomir's constitutional reform bill, designed to rid the Government of the Herreristas, was shelved. On January 2 the Herrerista party caucus voted to support the President's program for naval and air bases within the Pan American defense system, provided that the whole question be reviewed with each step taken toward construction of the bases.

The political truce proved short-lived. The Herreristas continued to obstruct the Baldomir defense program and other Government measures in Congress. President Baldomir finally lost patience when Senator Herrera led a combination of minority Deputies in defeating the Government's candidate for President of the Chamber. The three Herrerista members of the Cabinet were forced to resign March 18 and their Ministries were entrusted to three of the five remaining Cabinet officers.

Herrera's followers raised an outcry against this action. Under the Constitution they were entitled to three Cabinet places. Accordingly Baldomir on April 5 appointed three new Herreristas to the Cabinet, selecting men who were more amenable to his leadership. At the same time he resumed his efforts to reform the Constitution so as to end further obstruction. His path was rendered difficult by the fact that the Herreristas, under the 1934 Constitution, held half the seats in the Senate and could count upon the support of a minority faction of Colorado Senators in blocking reform. In June a group of prominent citizens issued a manifesto urging early revision of the charter. Later the President succeeded in assembling all political groups except the Herreristas into a committee which formulated constitutional amendments for submission to the voters at the March, 1942, general election. The election of a new President and a complete new Congress was scheduled for that time.

Anti-Axis Sentiment. The President and his supporters were aided in their political struggle by the steady growth of pro-democratic and anti-Axis sentiment. This turned majority opinion progressively against the Herreristas, who on May 26 had again affirmed their policy of strict Uruguayan neutrality in the world conflict and opposition to the use of Uruguayan defense bases by foreign powers. In November the Herreristas presented a motion in Congress for suspension of the compulsory military

service law, due to go into effect at the beginning of 1942.

Despite desperate legal efforts to secure the release under bond of the eight German Nazis arrested in 1940 in connection with a revolt (see preceding *YEAR BOOK*), they were held in jail awaiting trial throughout 1941. The Government on February 14 closed three private German schools in Paysandú Department for alleged pro-Nazi teaching. Pro-democratic Uruguayans were aroused by provocative Nazi propaganda against the Government's defense-base program and by the publication in Montevideo on May 31 of the country's first pro-Axis newspaper, *La Libertad*.

A wave of anti-Axis demonstrations swept the republic after Italian Fascists attending an Italian Red Cross gathering in Durazno, near the capital, on June 29 fired pistols at a crowd of jeering, stone-throwing students and other anti-Fascist demonstrators, killing two persons and wounding eight. The police arrested 20 persons, including an Italian vice consul and an Italian Army captain. One of the persons killed was a 70-year-old school teacher, Gregorio Morales. A nation-wide protest strike was called by the General Council of University Students, which demanded the ousting of pro-Nazi, Fascist, and Falangist professors from the universities, the expulsion from Congress of Deputy Alejandro Kayel, publisher of the pro-Nazi newspaper *La Libertad*, and the suspension of all Nazi newspapers "constituting a threat to national sovereignty." Anti-Axis rioting continued for several days, assuming serious proportions in the town of Trinidad where troops had to use sabers to disperse 300 persons attacking an Italian-owned restaurant.

The Cabinet on July 1 decided on new legislation for the repression of totalitarian activities. The Chamber of Deputies suspended Kayel by unanimous vote July 30 because of his newspaper's attacks on the Government and its supporters in Congress. On August 13 Kayel announced that the newspaper would be suspended "for economic reasons," thus forestalling impending Congressional action. In August the Minister of Interior recommended the closing of the *Fundación Española*, which was considered an agency of the Spanish Falange. Rejecting an Italian protest, the Government on September 11 expropriated two Italian and two Danish steamships that were lying idle in Montevideo harbor. They were placed in inter-American trade to relieve a severe shipping shortage.

A renewal of the Congressional investigation of 1940 into Nazi and other totalitarian activities in Uruguay was authorized by the Chamber of Deputies October 8 after hearing secret testimony. A permanent committee was appointed for this purpose, with authority to investigate Government departments, the army, and the police. The committee reported on December 30 that a raid on a Fascist headquarters in the capital the previous day revealed a Fascist military organization taking orders from Rome.

Collaboration with United States. The widening of the breach between Uruguay and the Axis powers was accompanied by progressively close Uruguayan cooperation with the United States. By an agreement announced January 11, the two republics agreed to exchange Ambassadors instead of Ministers. William Dawson, the first U.S. Ambassador to Montevideo, presented his credentials July 12. On May 20 a Uruguayan military and naval mission arrived in the United States to buy arms, planes, and other war equipment in connection with the Government's defense program.

The Uruguayan Congress appropriated 7,500,-

000 pesos to initiate the arms-purchase program and the Government proceeded with the preliminaries of constructing an arms and munitions factory, a civil and military airdrome, and a naval base. Actual execution of the program, however, depended upon the financial and technical cooperation of the United States, which had been offered in 1940. Despite internal opposition offered by the Herreristas, agreement on the terms of this cooperation were finally reached. On August 19 the Baldomir Government formally accepted an offer of the Export-Import Bank of Washington to extend a \$17,000,000 arms credit on extremely liberal terms to Uruguay. (The report that a \$7,500,000 loan of this nature was obtained from the Import-Export Bank in December, 1940, proved premature.) The Chamber of Deputies authorized acceptance of the arms credit by a large majority October 22. The bill then went to the Senate.

Previously the Government had demonstrated its readiness to permit United States forces to use Uruguayan ports and other facilities if they became involved in the war. On June 20 the Baldomir Cabinet submitted to all the other American republics a plan for treating as a non-belligerent an American country at war with a non-American power. This program won wide acceptance, except in Argentina. The two countries drew closer together economically through a great increase in mutual trade, and in May the U.S. Government gave formal notice of its intention to renew the negotiations for a reciprocal trade agreement with Uruguay that broke down in 1940.

The Japanese attack of December 7-8 upon the United States aroused general indignation in Uruguay. In a decree issued December 9 the Government condemned the attack and declared it an act of aggression upon all American states under Resolution XV of the Havana Conference of 1940. The decree affirmed the solidarity of Uruguay with the United States and stated that the Uruguayan Government would not treat the United States as a belligerent. On December 12 another decree froze German and Japanese credits and prohibited commercial activity in Uruguay by Axis nationals or governments. The Colorado party, controlling the Chamber of Deputies, announced on December 9 that it favored a declaration of war on Japan. Action on this issue was postponed by the Government pending the conference of Foreign Ministers of the American republics scheduled for early in 1942 (see PAN AMERICANISM).

Other Foreign Relations. Uruguay also tightened its political and economic bonds with neighboring countries, particularly through the conference of countries of the Rio de la Plata basin held in Montevideo beginning January 27 (see REGIONAL CONFERENCE OF THE RIO DE LA PLATA). As a result of this conference, seven agreements for closer commercial, financial, and cultural contacts between Uruguay and Paraguay were signed February 5. On February 7 five agreements of similar nature were concluded by Uruguay and Bolivia. The Uruguayan Government also participated in bilateral negotiations with Argentina and Brazil and in multilateral discussions looking toward closer military and economic collaboration. In mid-October it was announced that the British Government had assented to a new contract providing for the export to Britain during the year ending October, 1942, of 295,000 tons of beef and 5,000 tons of mutton from Uruguay. Prices under the new contract were reported to be 10 per cent higher than those of the previous year.

Economic Measures. Facing a cumulative budget

deficit estimated in October at between 40,000,000 and 50,000,000 pesos, the Government obtained passage early in that month of legislation designed to bring the budget into balance. It was authorized to issue 25,000,000 pesos of 5 per cent internal bonds to cover public works and other pre-1941 commitments. The Government's share of the profits of the Bank of the Republic was applied to current and other fixed expenses. Several additional bond issues were authorized to meet various Government obligations. The Uruguayan peso strengthened noticeably in relation to the dollar toward the end of 1941 as a result of heavy North American purchases of Uruguayan products. By a decree of June 20 the Government's power to curb prices, hoarding, etc., was extended for another eight months. The inability of Germany to deliver equipment ordered for the great Río Negro power and navigation project delayed its completion. As a result, an order for one hydro-electric generator was switched to the United States.

See ARGENTINA, BOLIVIA, and PARAGUAY, under *History*; LEND-LEASE ADMINISTRATION; LIVESTOCK; PAN AMERICANISM; REGIONAL CONFERENCE OF THE RIO DE LA PLATA.

USHA. See HOUSING AUTHORITY, U.S.

U.S.S.R. See UNION OF SOVIET SOCIALIST REPUBLICS.

USTACHI. See YUGOSLAVIA under *History*.

UTAH. A mountain State. Area: 84,916 sq. mi., including 2,570 sq. mi. of inland water. Population: (1940 census) 550,310. The urban population comprises 55.5 per cent of the total (U.S. average, 56.5 per cent); non-white population, 1.2 per cent (U.S. average, 10.2), elderly (65 years and over), 5.5 per cent. Utah ranks 10th among the States in area, 40th in population, and 42d in density, with an average of 6.7 persons per square mile. The largest city and capital is Salt Lake City with 149,934 inhabitants. There are 29 counties and four cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Charles H. Skidmore, Superintendent of Public Instruction, there were 137,434 pupils enrolled in the public schools of Utah during the school year 1939-40, 78,394 in elementary schools and 59,040 in secondary schools. Teachers numbered 4,608 and received an annual average salary of \$1,376.19. Total expenditures for the year, including debt service, were \$13,271,541.42.

Transportation. State highway mileage in 1939, including streets under State control, totaled 5,164, of which 4,303 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 143,634; 117,026 were private and commercial automobiles, 661 busses, and 22,234 trucks and tractor trucks. Gross motor-fuel consumption was 107,194,000 gal. Net motor-fuel tax receipts were \$4,056,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$1,227,000.

Railways of all classes extended 2,086 miles (Dec. 31, 1939) .89 per cent of the total mileage in the United States. Class I steam railways (1,769 miles) reported 5,804,938 tons of revenue freight originating in Utah in 1940 and 4,780,164 tons terminating in Utah. There are 26 airports and landing fields in the State (16 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 100 civil aircraft in the State

and 763 airline transport, commercial, and private pilots (645 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 1,122,200, as compared with 1,080,900 acres in 1940. According to the latest census, there are 25,411 farms, valued at \$154,358,365, averaging 287.4 acres each. Farm population numbered 104,459 or 19.0 per cent of the total. Leading crops, hay, worth \$10,294,000 and producing 1,229,000 tons, and wheat, \$6,113,000, 7,027,000 bu.

Manufacturing. The total value of manufactured products, according to the latest census, was \$167,172,226 (for the year 1939); 560 establishments employed 11,554 wage earners who received \$11,967,762 in wages for the year.

Mineral Production. The leading minerals are: Copper, of which 525,154,000 lb. valued at \$61,443,018 were produced in 1941; gold 347,784 fine oz., \$12,172,440; and silver, 11,203,733 fine oz., \$7,967,099. This constituted increases of 13 per cent for copper, 2 per cent for gold, and 8 per cent for silver, as compared with the preceding year. Other important minerals are: Coal, 3,340,000 short tons valued at \$7,114,000 in 1939 (3,524,000 short tons in 1940); lead, 67,634 short tons, \$6,357,596 (75,688 short tons in 1940). The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$80,221,937 or 1.89 per cent of the total for the United States. Utah ranks 13th among the States in the value of mineral production.

Trade. According to the 1940 census there were 957 wholesale establishments in Utah, employing 6,705 persons, reporting net sales for 1939 of \$194,172,000 and annual pay roll of \$10,358,000. There were 6,372 retail stores with 19,562 employees, reporting sales of \$170,728,000 and pay roll of \$18,743,000. Service establishments numbered 2,387, employing 3,753 persons for \$3,392,000 per year, and reporting a business volume amounting to \$11,416,000. The leading business center of the State is Salt Lake City which reported wholesale sales of \$129,699,000 and retail sales of \$75,831,000. Salt Lake County, including Salt Lake City, is the leading county in the volume of receipts for its service establishments (\$7,280,000).

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Utah was \$15,882,000. Under the Social Security program, financed by Federal funds matching State grants, 14,284 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$26.68 (U.S. average pension, \$21.08); 10,483 dependent children in 4,024 families received average monthly payments of \$41.83 per family (U.S. average, \$32.73); and 183 blind persons received \$26.27 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 4,855 and received \$26.97 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 556 (\$37,000); NYA student work program, 2,238 (\$22,000); NYA out-of-school work program, 1,403 (\$28,000); WPA, 8,425 (\$538,000); other Federal emergency projects, 230 (\$26,000); regular Federal construction projects, 2,511 (\$319,000). The Farm Security Administration certified subsistence payments totaling \$8,000 for the month to 229 cases.

Legislation. The Legislature convenes in regular session on the second Monday of January in odd

years. It is composed of 23 Senators (19 Democrats and 4 Republicans in 1941) and 60 Representatives (44 Democrats and 16 Republicans).

In the 1941 regular session, 323 bills were introduced in the Senate, of which 78 were enacted into law, and 232 in the House, of which 47 were enacted. Most of the enactments, according to the Utah Taxpayers Association, was considered desirable and characterized by "good common sense." Progress toward the reorganization of the State government, in line with recommendations contained in a message from the Governor, constituted the outstanding legislation; a number of reorganization bills which failed to pass in the general session were reconsidered in a special session. Also of special interest were Senate Bills 71 and 72 requiring tests for venereal disease of applicants for marriage and of expectant mothers. The numerous efforts to increase taxation were defeated with two exceptions: a four-cents-per-gallon tax was imposed on Diesel engine fuel used on highways, and a graduated chain-store tax was levied on companies operating ten or more stores in the State.

Finances. Total tax collections in Utah for the fiscal year ending in June, 1941, were \$21,170,000 (1940: \$19,733,000). Total sales amounted to \$9,276,000, including general sales, \$4,542,000, motor fuel, \$4,232,000. Taxes on specific businesses ran to \$644,000, general and selective property, \$4,056,000, unemployment compensation, \$2,865,000. The net income taxes were \$1,754,000.

Cost payments for the operation of general government totaled \$22,097,000 in 1939, the latest year available. (Revenues for the general government for that year were \$28,237,000.) Cost of operation per capita was \$40.54. Total gross debt outstanding in 1941 was \$2,105,000, as compared with \$11,445,000 in 1932.

Officers and Judiciary. The Governor is Herbert B. Maw (Dem.), inaugurated in January, 1941, for a four-year term; Secretary of State, E. E. Monson; Attorney General, Grover A. Giles; State Treasurer, Oliver G. Ellis; State Auditor, Reese M. Reese. Chief Justice of the Utah Supreme Court is David W. Moffat; there are four associate members elected by popular vote for 10-year terms.

See AQUEDUCTS; PLANNING.

UTILITIES. See FINANCIAL REVIEW; also, ELECTRIC LIGHT AND POWER; GAS INDUSTRY; TELEGRAPHY; TELEPHONY, ETC.

UZBEK SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

VARIOPLEX SYSTEM. See TELEGRAPHY.

VATICAN CITY. A sovereign state, officially known as the State of Vatican City, established within the city of Rome as the seat of the Papacy on June 10, 1929, in accordance with the Italo-Vatican (Lateran) Treaty of Feb. 11, 1929 (see 1929 YEAR BOOK, p. 417). Sovereign in 1941, Pope Pius XII (Eugenio Pacelli), who succeeded Pius XI Mar. 2, 1939.

The area of Vatican City is 108.7 acres, including St. Peter's Square, and in addition 13 ecclesiastical buildings outside of its limits enjoy extraterritorial rights. It has its own coinage, import duties, railway station, and its postal, telegraph, and radio facilities. The census of 1939 showed 953 inhabitants. Under the Constitution of June 7, 1929, the Pope exercises full legal, judicial, and executive powers. He delegates administrative authority within Vatican City to a governor (Marquis Camillo Serafini), who is assisted by a counselor general and

other officials. The legal system is based on canon law and ecclesiastical rules. The chief advisers of the Pope are the 70 members of the College of Cardinals, who are appointed by him for life and elect his successor upon his death. From Vatican City the 11 committees forming the Curia Romana carry on the central administration of the Roman Catholic Church. Relations between the Church and the governments of the world are conducted by the Papal Secretary of State (Luigi Cardinal Maglione was appointed to this office Mar. 11, 1939). The Holy See maintains diplomatic relations with 35 governments and has unofficial relations by means of Apostolic Delegates with a number of other countries, including the United States.

See ITALY and SPAIN under *History*; ROMAN CATHOLIC CHURCH; UNITED STATES under *Foreign Affairs*.

VEGETABLES. See HORTICULTURE.

VENEZUELA. A republic of South America, consisting of a Federal District, 20 States, and two Territories. Capital, Caracas.

Area and Population. Area, 352,143 square miles; population, 3,491,159 at December, 1936, census (1941 census, 3,942,747, preliminary). There are whites, Indians, Negroes, and mixtures of all three races. Immigrants exceeded emigrants by 600 in 1940 (2,608 in 1939). Populations of the capital and five largest State capitals in 1937 were: Caracas (Federal District), 203,342; Maracaibo (State of Zulia), 110,010; Barquisimeto (Lara), 50,774; Valencia (Carabobo), 49,963; Maracay (Aragua), 29,255; and San Cristóbal (Tachira), 22,058.

Defense. As of Nov. 1, 1940, the active army numbered 11,000 men; trained army reserves, 7,500; active air force, 373. The navy comprised 6 gunboats and patrol vessels and several auxiliary craft. The defense appropriation for 1940-41 was 39,911,000 bolivares. Under an agreement signed Mar. 24, 1941, a United States naval mission of six officers was engaged to advise the Venezuelan navy for four years.

Education and Religion. At the 1926 census, about 57 per cent of the adult population were illiterate. Out of an estimated school-age population of 720,000 in 1939, 295,462, or 41 per cent, were registered in classes, as against 19.9 per cent of the school-age population in 1936. There were 4,142 public primary schools (1938) with 234,024 pupils; 65 secondary and special schools, with 3,705 pupils; and three universities, with 2,125 students. Roman Catholicism is the predominant religion.

Production. The principal industries are agriculture, stock raising, petroleum mining, manufacturing, pearl fishing, and forestry. Production of coffee in 1940-41 was 112,000,000 lb.; of other crops (in metric tons): Cacao (exports), 15,378 in 1939; cane sugar, 24,000 in 1939-40. Tobacco, cotton, corn, beans, fruits, potatoes, coconuts, rice, and wheat are other leading crops. Petroleum production declined from 30,533,706 metric tons in 1939 to 27,443,001 in 1940 but Venezuela retained third place among the world's producers. Oil refined in Venezuela increased from 1,344,573 metric tons in 1935 to 3,987,593 in 1940. The 1940 gold output was 4,565 kilograms; diamonds, 14,525 carats; cement, 87,062 metric tons. Some salt, copper, coal, iron, tin, and asbestos are mined. The forests yield balata, tonka beans, divi-divi, vanilla, etc. According to the census of national wealth of 1936-37, total capitalization of all economic enterprises was 3,523,000,000 bolivares, divided as follows: Petroleum activities, 1,109,000,000 (31.48 per cent);

agriculture, 1,000,000,000 (28.38); commercial and service enterprises, 616,000,000 (17.48); cattle, 500,000,000 (14.19); industry, 298,000,000 (8.46).

Foreign Trade. Imports were valued at 311,182,000 bolivares in 1940 (326,393,000 in 1939); exports, 860,909,000 (953,337,000 in 1939). Petroleum and its products accounted for 94 per cent of all the 1940 exports. The other chief exports were coffee, 18,653,795 bolivares; uncoined gold, 16,785,763; cacao, 8,528,321. The United States furnished 73.7 per cent of the 1940 imports (61.1 in 1939); Great Britain, 7.6 (6.2); Germany, 0.4 (9.5). Of the 1940 exports, 34.6 per cent went to Aruba (37.4 per cent in 1939); 32.0 to Curaçao (34.4); and 22.6 to the United States (15.8). Shipments to Aruba and Curaçao all represented crude oil for refining. See TRADE, FOREIGN.

Finance. Actual budget receipts for the fiscal year ended June 30, 1940, were 353,548,000 bolivares; expenditures, 382,490,000 bolivares. Original budget estimates for 1940-41 balanced at 344,515,000 bolivares but expenditures were subsequently reduced by 33,000,000 bolivares. For 1941-42, revenues were estimated at 303,535,000 and expenditures at 302,594,000 bolivares. The public debt was completely liquidated in 1935. On Jan. 1, 1939, there was an internal indebtedness of 2,648,968 bolivares. As of Mar. 31, 1941, Venezuela had utilized credits of \$183,000 advanced by the Export-Import Bank of Washington and the Bank was committed to make additional loans of \$3,417,000. The controlled exchange rate of the bolivar was \$0.3135 in 1939 and 1940; uncontrolled, \$0.2890 in 1940 (\$0.3115 in 1939). By a decree of July 23, 1941, the rate of exchange was fixed at 3.35 instead of 3.19 bolivares to the dollar.

Transportation. The railways, with 589 miles of common carrier line, carried 426,327 metric tons of freight in 1940, their receipts totaled 7,660,000 and expenditures 6,971,000 bolivares. The 1940 road mileage was 5,882 (see ROADS AND STREETS). The government-owned airways system, with over 2,560 miles of route, carried 118,459 lb. of air mail in 1940; its receipts were 2,058,300 bolivares and expenditures 1,195,700 bolivares. The Royal Dutch Airways system connects the coastal cities with Aruba and Curaçao while Pan American Airways provides service between all of the chief coastal cities and other parts of the hemisphere. The principal ports are La Guaira and Puerto Cabello.

Government. The Constitution of July 11, 1936, vests executive powers in a President elected by Congress for five years and ineligible for reelection. There is a Senate of 40 members chosen by the State legislatures and a Chamber of Deputies of 87 members elected by municipal councils. The State legislatures and municipal councils are elected by direct ballot of literate males 21 or more years of age. The Constitution prohibits communism and anarchism. For the 1941 Presidential election, see *History*.

HISTORY

New President Elected. The Venezuelan Congress on Apr. 28, 1941, elected Gen. Isaías Medina Angarita to succeed President Eleázar López Contreras for the five-year term beginning May 5, 1941. General Medina, who resigned his post as Minister of War under President López Contreras to run for the Presidency, obtained 120 votes against 13 for Rómulo Gallegos, head of the Caracas municipal council, noted novelist, and former Minister of Education; 2 for Diógenes Escalante, Venezuelan Ambassador to Washington; and 1 each for Luis Gerónimo Pietri and José Izquierdo. The retirement of President López

Contreras at the end of his first Presidential term was another step in fulfillment of his promise to restore constitutional, democratic processes of government as rapidly as possible after 26 years of dictatorial rule by the late President Juan Vicente Gómez.

Adherents of López Contreras made every effort to induce him to reconsider his decision not to accept a second term, which was barred by the Constitution. Candidates supporting his Government won an overwhelming victory on January 30 when half the Lower House of Congress was renewed. Forty-seven Deputies were elected by newly chosen State Legislatures in 20 States and the Federal District. This encouraged supporters of a second term for López Contreras to seek a Supreme Court decision, based on a legal loophole in the Constitution, permitting his continuance in office. The President repudiated this campaign on March 5 by addressing telegrams to the presidents of the States announcing his "frank resolution not to favor or accept constitutional reforms" of this nature. General Medina then announced his candidacy (March 14).

During the campaign Gallegos advanced a demand for direct election of the President, thus increasing his popularity with labor and liberal groups. All candidates campaigned with what appeared to be complete freedom until April 21, when the retiring President induced the two leading aspirants—Medina and Gallegos—to end their campaign activities and permit Congress to choose a new executive undisturbed by political propaganda. The election of Medina was generally conceded in advance of the balloting.

Medina Administration. The new President, with the support of his popular predecessor, proceeded to carry forward the liberal and tolerant policies of López Contreras. His Cabinet, announced May 6, included only three Ministers who had served under López Contreras. A Cabinet shake-up took place for unexplained reasons November 22. The Ministers of Agriculture and of Labor and Communications were replaced. At the same time President Medina appointed new presidents for a number of States. On May 3 Congress elected seven justices of the Supreme Court, including two holdovers, to serve until 1946.

Besides the maintenance of internal order, the main problems confronting the administration were the economic development of the country, cushioning the national economy against adverse repercussions of the World War, and the determination of Venezuela's course with respect to that rapidly widening conflict.

Economic Developments. The decline in oil sales that caused curtailment of production and adverse effects in other fields of activity late in 1940 was sharply reversed during 1941. Larger purchases by the United States and a shift in British and Canadian purchases to Venezuela caused a rise in petroleum output to near the record 1939 level. This brought a general improvement in economic conditions and in the budget situation. The acute shortage of dollar exchange, that led the Central Bank to obtain a \$10,000,000 credit from the National City Bank of New York late in 1940, was replaced by an abundance.

A flood of new orders were placed for United States manufactures and other products but many of them could not be filled because of the priorities and shipping crises. Another disturbing factor was the elimination of European markets for Venezuelan coffee and other products, thus increasing the republic's dependence upon the oil industry.

Petroleum exports by the middle of 1941 accounted for some 94 per cent of all Venezuela's dollar exchange. The Government sought to remedy this situation by pressing forward with the program evolved by President López Contreras for stimulating agricultural and dairy production, cattle-raising, and industrial activity.

The importance attached to economic problems was indicated by the legislation enacted by the ordinary session of Congress that ended July 17. Laws were passed relating to labor, civil aviation, navigation, coinage, pastoral fencing, public credit, and the holding of an electoral census and elections Amendments to the Banking Law, the Organic Law of Liquor Revenue, and the Organic Law of the National Treasury were authorized. The Government also concluded a trade agreement with Canada and opened negotiations for similar accords with a number of the other Latin American countries.

Foreign Relations. President Medina, who had toured United States defense establishments in 1940, continued the firm support of the policy of inter-American solidarity and continental defense that had marked the López Contreras administration. This course brought Venezuela into still closer relations with the United States and into conflict with the Axis powers.

On the night of March 31 one German and three Italian ships lying in the harbor of Puerto Cabello were fired and destroyed by their crews to prevent their seizure by the Venezuelan Government. The port authorities frustrated efforts to burn and scuttle three other Italian ships. The incident touched off anti-Axis demonstrations in the city and martial law was declared for some hours until order was restored. About 36 German and 300 Italian sailors were arrested and interned for violating the country's neutrality laws. On April 4 a German freighter was seized in Maracaibo harbor.

On April 25 the head of the new U.S. naval mission arrived in Venezuela to take over the work formerly performed by an Italian mission, which was dismissed when Italy entered the war (see above under *Defense*). General López Contreras, who was named commander-in-chief of the armed forces after relinquishing the Presidency, was placed in charge of Venezuela's participation in continental defense on August 17. On September 3 he arrived in the United States with a group of army officers for a four-months study of U.S. defense plants and preparations.

Immediately following the announcement of the Japanese attack upon Pearl Harbor on December 7, the Venezuelan Government took extraordinary measures to safeguard petroleum fields, airports, and industrial and military establishments against sabotage. President Medina and his Foreign Minister sent messages of support and solidarity to President Roosevelt and Secretary of State Hull on December 9-10. A decree of December 12 stated that in line with the decisions of the Havana Conference of 1940 (see YEAR BOOK for 1940, p. 579) the Government would not apply its rules of neutrality to any American state at war with non-American powers. This opened Venezuelan ports to the ships of the United States and other American countries at war with the Axis. On the same day all Axis funds were frozen. Suspension of all radio communication facilities with all countries except those of the Western Hemisphere was announced December 27. Diplomatic relations with Germany, Italy and Japan were severed on December 31.

Another important development of the year was

the announcement by President López Contreras on April 19 that an agreement had been reached with Great Britain defining British and Venezuelan interests in the undersea area of the Gulf of Paria and ceding to Venezuela the small island of Patos. Patos, lying within three miles of the Venezuelan coast, had been occupied by Great Britain although claimed by Venezuela. A long controversy between Venezuela and Colombia over their mutual frontier was settled by a treaty signed April 5 (see *COLOMBIA* under *History* for terms). An important arbitration treaty with Brazil was ratified early in the year.

See CANADA and COLOMBIA, under *History*; CHEMISTRY, INDUSTRIAL; LEND-LEASE ADMINISTRATION; NAVAL PROGRESS; PAN AMERICANISM.

VENTILATING. See HEATING AND VENTILATING.

VERMONT. A New England State. Area: 9,609 sq. mi., including 331 sq. mi. of inland water. Population: (1940 census) 359,231. The urban population comprises 34.3 per cent of the total (U.S. average, 56.5 per cent); non-white population, 0.1 per cent (U.S. average, 10.2); elderly (65 years and over), 9.5 per cent. Vermont ranks 42d among the States in area, 45th in population, and 28th in density, with an average of 38.7 persons per square mile. The capital is Montpelier with 8,006 inhabitants; largest city, Burlington, 27,686. There are 14 counties and three cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education conducted by the U.S. Office of Education, there were 67,931 pupils enrolled in the State School System of Vermont during the school year 1937-38. The instructional staff comprised 2,749 persons, who received an annual average salary of \$952 (U.S. average: \$1,374); 277 or 10.8 per cent were men. Expenditures for all public schools in 1937-38 were \$4,930,089, making a total cost per capita of \$12.77 (U.S. average: \$17.15). For higher education, see under *Vermont* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 1,756, of which all was surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 94,472; 83,922 were private and commercial automobiles, 95 busses, and 9,628 trucks and tractor trucks. Gross motor-fuel consumption was 70,806,000 gal. Net motor-fuel tax receipts were \$2,781,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$2,625,000.

Railways of all classes extended 919 miles (Dec. 31, 1939) .39 per cent of the total mileage in the United States. Class I steam railways accounted for 481 miles. There are 12 airports and landing fields in the State (one lighted field) and three seaplane anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 69 civil aircraft in the State and 287 commercial and private pilots (255 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 1,048,000, as compared with 1,062,000 acres in 1940. According to the latest census, there are 23,582 farms, valued at \$111,108,534, averaging 155.5 acres each. Farm population numbered 107,066 or 29.8 per cent of the total. The leading crop was hay, worth \$14,360,000 and producing 968,000 tons.

Manufacturing. According to the latest census, the

total value of manufactured products was \$103,154,301 (for the year 1939); 717 establishments employed 21,759 wage earners who received \$21,232,355 in wages for the year.

Mineral Production. The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$6,972,234 or only .16 per cent of the total for the United States. Leading items were stone and slate.

Trade. According to the 1940 census there were 383 wholesale establishments in Vermont, employing 2,354 persons, reporting net sales for 1939 of \$57,112,000 and annual pay roll of \$3,434,000. There were 5,423 retail stores with 12,010 employees, reporting sales of \$123,369,000 and pay roll of \$10,707,000. Service establishments numbered 1,785, employing 1,544 persons for \$1,239,000 per year, and reporting a business volume amounting to \$5,982,000. The leading business center of the State is Burlington which reported wholesale sales of \$14,251,000 and retail sales amounting to \$16,886,000.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Vermont was \$5,049,000. Under the Social Security program, financed by Federal funds matching State grants, 5,775 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$16.89 (U.S. average pension, \$21.08); 1,693 dependent children in 613 families received average monthly payments of \$32.69 per family (U.S. average, \$32.73); and 158 blind persons received \$21.87 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 1,599 and received \$16.95 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 161 (\$11,000); NYA student work program, 1,038 (\$7,000); NYA out-of-school work program, 780 (\$17,000); WPA, 2,662 (\$169,000); regular Federal construction projects, 465 (\$53,000). The Farm Security Administration certified subsistence payments totaling \$1,000 for the month to 34 cases.

Legislation. The General Assembly convenes in regular session on Wednesday after the first Monday of January in odd years. It is composed of 30 Senators (22 Republicans and 8 Democrats in 1941) and 246 Representatives (197 Republicans, 37 Democrats, 12 others).

The Legislature met in regular session for 93 days in 1941, enacting a record-breaking total of \$22,341,000 in appropriations. The following account of important enactments is condensed from the *Burlington Free Press and Times*, Apr. 11, 1941.

While the legislature of 1941 will be remembered by many as the assembly which repealed the bonus law, substituting provisions for State pay of Vermont soldiers only in case of war, it was chiefly notable for the large volume of funds voted simultaneously with reductions in taxes totaling \$832,000 for the coming biennium.

Repeal of the pinball machine law, effective Sept. 30, 1941, will cost the State about \$92,000 in the next two years. Revision of income tax exemptions for taxpayers in the low unearned income class will reduce State revenue by an estimated \$10,000 to \$15,000 annually. A reduction in the tax rate on bank deposits will cost another \$100,000 a year, and amendments to the cigarette tax law about \$5,000 more annually. The State treasury surplus and rising revenues are expected to offset these tax reductions.

The critical world situation and allied defense problems in this country resulted in action by the legislature. In addition to overhauling of the soldiers' bonus law, uniform acts on control of sabotage and the handling of explosives were passed, and legislation was enacted to provide for establishment of the State guard to replace the national guard while in federal service. Five laws were

passed which were designed to protect rights of men who have gone or are going into military service.

Stemming partly from the same source, legislation was approved appropriating \$65,000 for State aid to municipalities in purchasing land for airports, and establishing a State aeronautics board with a \$3,000 annual appropriation to promote aviation. It was the first step taken toward state ownership of airports. Establishment of the new State office of industrial agent, became tied up with the defense situation when authorization of the office was urged as an aid to Vermont participation in the growing volume of industrial production for defense.

The 1941 general assembly was liberal in other ways, however. It approved amendments to the State unemployment compensation act which will mean more benefits for unemployed, through shortening the waiting period and increasing the maximum benefits payable. It enacted changes in the workmen's compensation act relating to death benefits and medical and hospital benefits which will further relieve the injured employee and his dependents. Divorce laws were liberalized by softening the harsh terms of intolerable severity, and by adding a new ground which is equivalent to mutual consent after three years' separation.

Following years of squabbling between the utilities, exponents of public power and municipalities, the legislature finally approved a general enabling act which will permit any municipality in the State to buy or to construct a power plant following approval by 60 per cent of those voting at a meeting attended by a quorum of 80 per cent of the legal voters of the municipality.

The policy of tax relief for railroads was continued. The legislature gave the old age assistance department an increase of \$75,000 over the previous biennium. A new Bang's disease control program was adopted with a \$100,000 appropriation. An act was passed to establish a State safety commission to replace the governor's safety council. Three measures were enacted directed at control of venereal diseases, requiring premarital and prenatal blood tests for syphilis, and requiring persons with syphilis to undergo treatment by a physician.

All except one of the major recommendations contained in the inaugural program laid down last January by Gov. William II. Wills were enacted into law by the 1941 legislature. The one exception was his request for establishment of the State office of comptroller.

Mustering strong support, but not sufficient to result in new laws, several controversial measures were rejected by the 1941 legislature which may reappear at future sessions including the "loss leader" bill, the "fair trade" act, the comptroller bill and increased state aid for schools.

There was a special session of the legislature in September which was concerned primarily with the financial condition of the University of Vermont, funds were appropriated for current expenses for the next two years (\$260,000 a year) and a plan for retiring debts within twenty years was set up. Towns and cities were authorized to convey municipal airports to the Federal government.

Finances. Total tax collections in Vermont for the fiscal year ending in June, 1941, were \$12,393,000 (1940: \$11,641,000). Total sales taxes amounted to \$4,392,000, including motor-fuel, \$2,885,000. Taxes on specific businesses ran to \$1,519,000, general and selective property, \$401,000, unemployment compensation, \$1,585,000. The net income taxes were \$914,000. Cost payments for the operation of general government totaled \$10,482,000 in 1939, the latest year available. (Revenues for the general government for that year were \$14,890,000.) Cost of operation per capita was \$29.20. Total gross debt outstanding in 1941 was \$7,807,000 as compared with \$9,545,000 in 1932.

Officers and Judiciary. The Governor is William H. Wills (Rep.), inaugurated in January, 1941, for a two-year term; Lieutenant Governor, Mortimer R. Proctor; Secretary of State, Rawson C. Myrick; Attorney General, Alban J. Parker; State Treasurer, Thomas H. Cave; State Auditor, David V. Anderson. Chief Justice of the Vermont Supreme Court is Sherman R. Moulton; there are four associate members elected by legislature for two-year terms. See **FAIRS, EXPOSITIONS, AND CELEBRATIONS.**

VETERANS' ADMINISTRATION. As of June 30, 1941, there were in force 613,320 U.S. Government life insurance policies representing \$2,567,154,350 of

insurance. Disbursements for this type of insurance during the fiscal year 1941 were \$55,826,658.44. Monthly payments on yearly renewable term insurance policies were being made to 10,205 permanently and totally disabled veterans and the beneficiaries of 8,586 deceased veterans. Monthly payments on automatic insurance policies were being made to 240 disabled veterans and the beneficiaries of 45 deceased veterans. Disbursements for term and automatic insurance during the fiscal year 1941 were \$15,390,559.61. During the period Oct. 8, 1940, to June 30, 1941, 367,923 applications were approved for National Service life insurance aggregating \$1,193,665,500 of insurance. A total of 102 death claims under this type of insurance had been filed and awards made in 43 of these cases approximating \$237,500 in value. As of June 30, 1941, 10,135 applications for insurance benefits under the Civil Relief Act of Oct. 17, 1940, had been received. Of this number 6,718 applications representing \$20,015,076.02 of insurance had been approved.

On June 30, 1941, the total hospital load of the Veterans' Administration was 58,417 patients, of whom 58,160 were United States veterans. Of the United States veterans, 54,598 were in Veterans' Administration facilities, 2,531 in other Government hospitals and 1,031 in State or civil institutions. On the same date, the veteran population in domiciliary status in Veterans' Administration facilities totaled 13,978. In addition to the hospital and domiciliary load, an average of 5,966 veterans was cared for in State or Territorial homes during the fiscal year 1941.

Pension or compensation benefits were, on June 30, 1941, being paid to 618,926 living veterans and to the dependents of 237,515 deceased veterans. The disbursements during the fiscal year 1941, for this purpose, totaled \$433,113,953. The net disbursements made by the Veterans' Administration during the fiscal year ending June 30, 1941, from all appropriations and trust funds (including adjustments on lapsed appropriations) totaled \$614,357,411.24, not including those made from the U.S. Government life insurance funds for investment purposes.

For other discussion of veterans, see **AMERICAN LEGION; CIVIL SERVICE COMMISSION; PSYCHIATRY; PUBLIC HEALTH SERVICE; RED CROSS.**

FRANK T. HINES.

VETERINARY MEDICINE. The country continued free from the ever threatening foot-and-mouth disease, contagious pleuropneumonia, rinderpest, surra, and other contagions of livestock that exact enormous losses in many other countries, despite the changing and complex international situation involving new trade relationships and routes of travel. A continued progress was made in the control and eradication of infectious diseases and parasites existent within the country. In response to the request for a greatly increased production of dairy and poultry products the veterinarians of the country were putting forth every effort to prevent much of the great loss caused by diseases and parasites of livestock.

The declaration of war upon the United States found the Veterinary Corps of the Army prepared to meet the demands placed upon it. Its wartime service includes not only aid in the purchase of and the medical and surgical care of the horses and mules, of which there were about 50,000 at the opening of the war, and the inspection of forage, but also the inspection of meats, meat foods, and dairy products purchased by the army, and the maintenance of laboratories where equine affections

are investigated and diagnostic and protective biologics prepared. The preparation made for defense resulted in an increase of about 400 per cent in the veterinary personnel. Many changes were made in the Army veterinary training program. In recognition of the shortage of veterinarians and the vital importance of the food and livestock industry to national health veterinary students were placed in deferred classes. Those in the military service and those who might be inducted later were authorized to apply for commission in the Veterinary Corps Reserve and if found qualified be commissioned and placed on extended active duty. A food inspection service was established at Chicago in which about 175 officers received training. At the Medical Field Service School at Carlisle Barracks and at the Army Veterinary School in Washington short basic courses were given to meet the present requirements. Schools for training enlisted veterinary personnel were established at Camp Grant and Fort Bliss.

Brucellosis or Bang's Disease Eradication. A continued progress was made in the control and eradication work with Bang's disease of cattle so that by June 30 391 counties in 23 States were practically free and had been designated as modified accredited Bang's disease free areas (see YEAR BOOK 1940). Area work was being conducted in about 200 additional counties with a view to eradication. The approval in December, 1940, of calfhood vaccination as part of the Bang's disease control plan was followed by its adoption by the livestock sanitary authorities in 34 States. In most of these States it is provided that the owner may request to have his calves vaccinated at the proper time and dispose of the nonvaccinated reactors with indemnity in the usual manner, or he may have his calves vaccinated and retain the nonvaccinated reactors under quarantine for an indefinite period, with the understanding that no indemnity will be paid for them. By July 1, approximately 19,400 had been vaccinated under these cooperative plans. Studies of the results of calfhood vaccination in about 250 herds indicated that only slightly more than 1.2 per cent of the vaccinated animals later aborted owing to *Brucella* infection, as revealed by the agglutination blood test. Two of the chief criticisms of calfhood vaccination were met by an experiment completed during the year which showed that the virulence of strain 19 vaccine was not increased by repeated animal passage and that vaccinated animals, under the most favorable conditions, did not spread *Brucella* infection to contact animals.

Equine Encephalomyelitis, Infectious. The 1941 outbreak of equine encephalomyelitis began relatively early, more than 1,000 cases having been reported by June 30, and some 25,000 cases were reported by the close of the year, despite the efficacy of intradermal vaccination with chick-embryo vaccine. (This was an increase from 16,941 cases and 4,187 deaths in 1940.) Early rains and warm weather in the affected areas may have been influential in its early appearance and spread. The situation was complicated by the spread of the eastern type west of the Appalachians and by the discovery that the St. Louis encephalitis of man is transmissible to horses having been implicated in some western outbreaks. Evidence obtained in the Yakima Valley of Washington State in 1940 of the probable presence of both the western equine virus and the St. Louis virus of encephalitis in animal epidemics in man and horses led to an extensive epidemiological survey in 1941. Tests made of the serums of mammals and birds, both domestic and wild, collected principally in areas where cases had occurred resulted

in the detection of the presence of both virus types. The findings indicate that barnyards and fowl runs are the principal foci of infection of the two types. Both the St. Louis and the western equine viruses were isolated from *Culex tarsalis* mosquitoes in the Yakima Valley. In the great central valley of California about 26 per cent of the serums of human encephalitis patients were found positive to both the western equine and St. Louis encephalitis virus types. Antibodies against the St. Louis type were present in the blood of many horses and domestic fowl and usually were in association with antibodies of the western equine virus. It was suggested by the investigators that a common vector or common reservoir may be responsible for both the apparent and unapparent infections. The isolation of the western type virus from the brain and spleen of a prairie chicken in North Dakota while human epidemic cases were occurring in the vicinity was reported. It was demonstrated that some dogs are susceptible to the western type of the virus. An encephalitis in cattle and chickens unrelated in its etiology to equine encephalomyelitis made its appearance in the mid west.

Hog Cholera. Report was made of the first successful cultivation of the causative virus of hog cholera followed by 26 successful transfers. It was demonstrated to be present in large amounts in the culture. The culture virus produced characteristic hog cholera when injected into swine. It is thought that the culture virus is more active than the commonly used virus and that its practical use in hog cholera vaccination and hyperimmunization would result in a considerable saving.

Mastitis, or Garget. Progress was made in the control investigations underway with mastitis of dairy cows, more commonly known as garget. Gramicidin, the name given to a crystalline preparation separated from material isolated from a spore-bearing bacillus, which has been found highly bactericidal for gram-positive microorganisms, was shown to possess a definite destructive effect against *Streptococcus agalactiae* the principal cause of infectious mastitis, when injected directly into an infected focus in the udder. *S. agalactiae* infection was destroyed in 82.7 per cent of the infected quarters of udders of cows injected with novoxil liquid containing 5 per cent silver oxide in a light mineral oil. In control work in four dairy herds, 204 of 237 quarters were freed from *A. agalactiae* infection through one or more treatments with a 1:4,000 acriflavine solution. Experiments with a small number of cows indicated that iodized mineral oil has valuable therapeutic properties as a treatment for chronic bacterial infections of the bovine udder.

Phenothiazine Anthelmintic. Investigations of the newly discovered anthelmintic phenothiazine (YEAR BOOK 1940) confirmed the earlier findings concerning its prospective wide usefulness in removing parasites of livestock. This drug, now manufactured and marketed on a large commercial scale, is particularly useful in removing from domestic animals some of the most injurious internal parasites including stomach worms, hookworms, and nodular worms. It has been found effective also in removing blood-sucking and related strongyles from horses. While it is more effective than other parasiticides for removal of strongyles from horses and mules it may occasionally react unfavorably. Despite this, its administration in 30-gram doses has been found effective in the treatment of strongyles and has been accepted as the standard treatment for their removal from 1,000-lb. horses in the British army. In doses of about 0.2 gram per pound body weight it was reported to have given good results in re-

moving stomach and nodular worms from calves. In experiments with cattle, marked physical improvement followed its administration. In effectiveness phenothiazine was found to compare favorably with oil of chenopodium for removal of mature ascarids from swine and has the additional advantage of being effective for removal of nodular worms. In chickens it has been shown to remove a large percentage of cecal worms.

Therapeutics. Advances in the preparation and uses of sulfonamide drugs were outstanding in the field of therapeutics. They have proved to be of great value in the treatment of coccal infections, particularly through internal administration, and have been used locally in both the prevention against infection and the treatment of infections in superficial tissues and body cavities. Experiments in Louisiana with the coccidiosis of chicks that is due to *Eimeria tenella* revealed sulphur to possess a preventive value but to lack any curative effect. The continuous feeding of sulphur in amounts of 2 per cent by volume of the ration to 3- and 8-weeks-old chicks for a period of 22 and of 44 days respectively proved definitely harmful and this effect was more manifest in the younger than the older birds. Mapharsen was proved to be safe and economical in the treatment of enterohepatitis of the turkey a disease more commonly known as blackhead. The findings indicate that the proper use of this drug will save at least half of the birds when adequate treatment is given within a reasonable time after clinical symptoms appear.

Tick Fever and Cattle Tick Eradication. There was a continued advance in the eradication of the cattle fever tick in Florida, Texas, Puerto Rico, and the Virgin Islands. During the fiscal year ended June 30 12,410,587 inspections or dippings of cattle and 1,117,873 of horses and mules were conducted. In Puerto Rico and the Virgin Islands, where the tropical variety of fever tick *Boophilus annulatus australis* is prevalent, it was necessary to treat the sheep and goats and a few deer on infested premises and 870,882 inspections or dippings of these animals were conducted. The remainder of two counties in Florida and part of one county in Texas with an aggregate area of 886 square miles were released from Federal quarantine. In Texas eight counties remained under quarantine, part of one county aggregating 10 square miles having been re-quarantined. With the release of the eastern one-third of the island covering 945 square miles the entire territory of Puerto Rico was placed in the released area. In the Virgin Islands the islands of St. Thomas and St. John, covering 48 square miles, were released. At the close of the fiscal year ended June 30 the area under Federal quarantine in continental United States had been reduced to slightly less than 1 per cent of its original size. Fever-tick-infested deer continued to present the most troublesome problem in the Big Cypress Swamp area in Collier and Hendry Counties of Florida, and on the Island of St. Croix in the Virgin Islands of the UNITED STATES.

Tuberculosis Eradication, Livestock. Following the practical eradication of bovine tuberculosis, with the infection in the United States reduced to less than one half of 1 per cent at the end of 1940, retesting was continued in order to safeguard the health of herds against possible infection and a new spread of the disease with the view to a complete and permanent eradication. During the fiscal year ended June 30 12,229,499 tuberculin tests were applied to cattle of which 0.3 per cent reacted, the lowest since the commencement of the eradication project in 1917.

Bibliography. Among the publications of the year were: M. H. Clarke, *First Aid to Dogs and Cats* (London and Baltimore); J. T. Culbertson, *Immunity Against Animal Parasites* (New York); H. J. Harris, *Brucellosis (Undulant Fever). Clinical and Subclinical* (New York and London); A. T. Henrici, *The Biology of Bacteria: An Introduction to General Microbiology* (Boston and London); R. G. Hoskins, *Endocrinology: The Glands and their Functions* (New York); T. G. Hull, *Diseases Transmitted from Animals to Man* (Springfield, Ill., 2d ed.); R. A. Runnels, *Animal Pathology* (Ames, Ia., 2d ed.)

WILLIAM A. HOOKER.

"V" FOR VICTORY. See GREAT BRITAIN under *History*.

VICTORIA. See AUSTRALIA under *Area and Population*.

VILNA TERRITORY. See LITHUANIA under *Area and Population*.

VINYL, VINYLON. See CHEMISTRY, INDUSTRIAL.

VIRGINIA. A south Atlantic State. Area: 40,815 sq. mi., including 916 sq. mi. of inland water, but excluding part of Chesapeake Bay, 1,511 sq. mi. Population: (1940 census) 2,677,773. The urban population comprises 35.3 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 24.8 per cent (U.S. average, 10.2); elderly (65 years and over), 5.7 per cent. Virginia ranks 33rd among the States in area, 19th in population, and 17th in density, with an average of 67.1 persons per square mile. The largest city and capital is Richmond with 193,042 inhabitants. There are 100 counties and 15 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to the latest Biennial Survey of Education, there were 583,556 pupils enrolled in the State School System during the school year 1937-38. Of this total, 469,197 were enrolled in kindergartens and elementary schools and 114,359 in secondary schools; 154,330 were in separate Negro schools. The instructional staff comprised 17,795 persons, who received an annual average salary of \$864 (U.S. average: \$1,374); 2,379 or 14.1 per cent were men. Expenditures for all public schools in 1937-38 were \$25,703,757, making a total cost per capita of \$9.36 (U.S. average: \$17.15). There were 4,697 school buildings in the State, of which 2,168 were one-room, one-teacher schools. The value of public property used for school purposes was \$76,666,144. For higher education, see *Virginia* in the table of UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 45,934, of which 30,567 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 509,191; 422,591 were private and commercial automobiles, and 76,247 trucks and tractor trucks. Gross motor-fuel consumption was 417,599,000 gallons. Net motor-fuel tax receipts were \$19,410,000, the rate being five cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$7,159,000.

Railways of all classes extended 4,301 miles (Dec. 31, 1939) 1.83 per cent of the total mileage in the United States. Class I steam railways (3,470 miles) reported 23,041,567 tons of revenue freight originating in Virginia in 1940 and 33,368,503 tons terminating in Virginia. There are 52 airports and landing fields in the State (16 lighted fields) and five seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 374 civil aircraft in the State and 1,222 airline transport, commercial, and private pilots (977 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 3,779,600, as compared with 3,946,500 acres in 1940. According to the latest census, there are 174,885 farms, valued at \$674,975,424, averaging 94.0 acres each. Farm population numbered 926,280 or 34.6 per cent of the total. Leading crops with production in 1941 were: Corn, \$28,001,000, 32,942,000 bu.; tobacco, \$26,117,000, 91,122,000 lb.; hay, \$18,144,000, 1,264,000 tons; peanuts, \$8,968,000, 169,200,000 lb.; apples, \$8,629,000, 11,505,000 bu.; wheat, \$8,585,000, 7,665,000 bu.; potatoes, \$5,187,000, 6,916,000 bu.

Manufacturing. According to the latest census (for the year 1939) the total value of manufactured products was \$988,813,246; 2,579 establishments employed 133,896 wage earners who received \$115,538,622 in wages for the year.

Mineral Production. The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$43,582,537 or 1.03 per cent of the total for the United States. The chief item was coal of which 13,230,000 short tons were produced, valued at \$24,608,000 (14,950,000 short tons in 1940)

Trade. According to the 1940 census there were 2,432 wholesale establishments in Virginia, employing 28,236 persons, reporting net sales for 1939 of \$627,632,000 and annual pay roll of \$33,971,000. There were 29,610 retail stores with 74,864 employees, reporting sales of \$628,172,000 and pay roll of \$63,867,000. Service establishments numbered 9,183, employing 20,822 persons for \$15,189,000 per year, and reporting a business volume amounting to \$44,230,000. The leading business center of the State is Richmond which reported wholesale sales of \$208,066,000, retail sales of \$108,306,000, and \$9,742,000 receipts for its service establishments. Norfolk reported sales of \$106,889,000 wholesale and \$63,632,000 retail; Roanoke, \$37,524,000 and \$36,151,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Virginia was \$26,828,000. Under the Social Security program, financed by Federal funds matching State grants, 20,080 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$10.02 (U.S. average pension, \$21.08); 12,813 dependent children in 4,342 families received average monthly payments of \$20.01 per family (U.S. average, \$32.73); and 1,025 blind persons received \$12.61 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 5,352 and received \$9.96 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 5,377 (\$356,000); NYA student work program, 8,399 (\$54,000); NYA out-of-school work program, 8,607 (\$190,000); WPA, 17,378 (\$789,000); other Federal emergency projects, 6 (\$1,000); regular Federal construction projects, 49,822 (\$7,302,000). The Farm Security Administration certified subsistence payments totaling \$8,000 for the month to 135 cases.

Legislature. The General Assembly convenes in regular session on the second Wednesday of January in even years. (There was no session in 1941.) It is composed of 40 Senators (37 Democrats, 1 Republican, 2 vacancies in 1941) and 100 Representatives (93 Democrats and 7 Republicans).

Finances. Total tax collections in Virginia for the fiscal year ending in June, 1941, were \$66,911,000 (1940: \$58,808,000). Total sales taxes amounted to \$26,312,000, including motor fuel, \$21,352,000, alcoholic beverage, \$4,933,000. Taxes on specific businesses ran to \$11,063,000, general and selective property, \$2,818,000, unemployment compensation, \$10,160,000. The net income taxes were \$6,260,000. Cost payments for the operation of general government totaled \$43,699,000 in 1939, the latest year available. (Revenues for the general government for that year were \$76,641,000.) Cost of operation per capita was \$16.53. Total gross debt outstanding in 1941 was \$26,379,000, as compared with \$28,302,000 in 1932.

Officers and Judiciary. The Governor is James H. Price (Dem.), inaugurated in January, 1938, for a four-year term; Secretary of the Commonwealth, Raymond L. Jackson; Attorney General, Abram P. Staples; State Treasurer, Edwin B. Jones; Auditor of Public Accounts, L. McCarthy Downs; Comptroller, Le Roy Hodges. President of the Virginia Supreme Court of Appeals is Preston W. Campbell; there are six associate members chosen for 12-year terms See PRISONS.

VIRGIN ISLANDS. An insular possession of the United States, situated about 60 miles to the east of Puerto Rico. This possession forms the southwestern part of a group which, as a whole, also bears the name, Virgin Islands, and of which the rest is a British possession. When needful for distinction, and commonly abroad, the U.S. possession is known as the Virgin Islands of the United States. This possession comprises three inhabited islands—St. Thomas, St. Croix, and St. John—and some 50 uninhabited islets. Total area, 132 square miles; population, 24,889 in 1940; 22,012 in 1930. Areas and populations (1940) of the individual islands: St. Thomas, 22 square miles, 11,265 inhabitants; St. Croix, 84 square miles, 12,902 inhabitants; St. John, 20 square miles, 722 inhabitants. Of the whole population, 69 per cent in 1940 were Negroes, 22 per cent of mixed race, and 8.9 per cent whites; 1939's birth rate 35.8, death rate 20.9, per 1,000. Capital, Charlotte Amalie—pop. in 1940: 9,801—on the island of St. Thomas.

Production and Trade. The business of the islands suffered a long decline toward the end of Danish possession and under American rule as well, until helped by successive Federal grants. Such grants, in divers forms, for the 10 fiscal years 1931-40 approximated \$8,347,000, making about \$35 a year to the inhabitant. Notably the Virgin Islands Company, a corporate Federal instrument, against original outlay, in capital, of \$3,409,404 and five years' gross receipts of \$824,914, had expenses of \$873,321, leaving a deficit of \$48,407 before taxes and one of \$139,926 after taxes. At this cost the company created more or less employment for much of the population. Chiefly the Corporation kept alive the islands' old industry of making rum out of their sugar cane. The production of sugar cane found its main outlet in exports of sugar to the United States, but the islands' least-favored position as to taxes and agricultural subventions on sugar kept this export low. Cattle-raising, according to Governor Harwood, occupied two-thirds of the area of St. Croix Island in 1941 but only one-twentieth of the island's labor, and fewer cattle were being raised.

The islands continued fairly well served by shipping. In the fiscal year 1941, 979 merchant vessels entered the harbor of St. Thomas. Their gross tonnage totaled 3,303,135, of which U.S. registry sup-

plied about one-half. Vessels of other types being added, all ships entering St. Thomas in that year numbered 1,220 and totaled 3,943,124 gross tons. They ran higher than the year before, though shipping activity in general declined in most ports elsewhere.

The production of sugar in the Virgin Islands was estimated at 7,500 short tons for the crop of 1940-41, as against 9,141 tons, the year's quota allowed to enter the United States. In the calendar year 1940 the imports of merchandise from the United States totaled \$3,023,979; the exports of the islands' native products to the United States, \$1,448,020. Of the latter, rum furnished \$501,924; bitters, \$366,559.

Government. Under previous dispositions and the U.S. Congress, Organic Act of 1936, the Virgin Islands have a Governor, holding office by appointment of the President and, since 1939, acting under the supervision of the U.S. Department of the Interior. Justice is dealt by the U.S. District Court of the Virgin Islands and such subordinate courts as hold power under the Islands' local laws. A Legislative Assembly may enact, subject to Federal approval, measures relating to the Islands as a whole. This Assembly consists of the combined membership of two Municipal Councils. The councils have considerable authority to make local laws for their respective municipalities, that of St. Croix and that of St. Thomas and St. John. These exercise home rule to a degree that limits the Assembly's field. In each municipality the people elect the Council. The natives of the Islands are U.S. citizens, in general, though the phrasing of the grant of citizenship and of its amendment failed to take in some natives no longer in the Islands. Governor in 1941, Charles Harwood.

The chief Insular officers are paid by the United States. All taxes collected from inhabitants of the Islands, whether under Federal laws or under local laws, go into the treasuries of the respective municipalities. The revenue of the two municipalities and their expenditures, for the fiscal year 1941 were: St. Croix, \$139,111 in revenues and \$246,435 in expenditures; St. Thomas and St. John, \$349,260 and \$255,916. The yearly deficit of either municipality recurred without exception throughout the period of U.S. possession until St. Thomas and St. John, largely through a legal opinion granting to it funds held by the Harbor Board, attained a surplus of revenue in fiscal 1941. Yearly Federal appropriations cover each year's approximate deficits, as anticipated.

History. Governor Charles Harwood took office on Feb. 3, 1941. The Army's new air base on St. Croix Island went into use, June 1, being occupied by a force of pursuit airplanes. The Insular Legislature enacted a measure on wages and hours of employment, after the Federal model; it required payment of at least 15 cents an hour for unskilled work of certain kinds; of 20 cents for partly skilled, and of 30 cents for fully skilled. Employers protested that some of them would have to quit business if required to pay these rates. The Governor, however, signed the act, October 18. Measures were taken for the security of territory and people. The Governor proclaimed, May 29, that he had established a council for the defense of the Islands, to work with the Army and Navy and to consider questions of food-supply, civil liberties, recreational facilities, and measures against subversive agents. This body and the military authorities held a joint conference on December 9 to discuss the arming and training of a home guard and various other proposals for strengthening the islands' defenses.

VITAL STATISTICS. According to provisional tabulations published by the Bureau of the Census (Feb. 10, 1941) the birth rate in the United States showed some increase in 1940 over 1939. It rose from 17.3 live births per 1,000 population in 1939 to 18.0 in 1940. There were 2,147,985 births reported in 1940, or 35,722 more than the parallel provisional number reported for 1939. The final figure for 1939 was 2,265,588. The birth rate in the United States went steadily down over a period of 18 years, 1915-33. Since 1933, however, the rate has gradually pulled upward from that year's low of 16.6 to 1940's 18 births per 1,000 population. Provisional figures published Feb. 18, 1942, indicate that the upward trend continued in 1941, bringing the provisional birth rate to 19.0 per 1,000. New Mexico, Utah, Mississippi, Arizona, and South Carolina had the highest birth rate figures for 1940, ranging from New Mexico's 27.7 per 1,000 population to South Carolina's 22.7 per 1,000. The birth rate in the District of Columbia was 23.1. New Jersey had the lowest birth rate for 1940 with 14.1; New York had the next lowest, 14.6.

The number of deaths also increased from 10.6 deaths per 1,000 population in 1939 to 10.8 in 1940. There were 1,417,269 deaths reported in 1940. The final figure for 1939 was 1,387,897 deaths. The United States death rate has steadily declined since 1936, when the death rate was 11.6 per 1,000 population, to the lowest figure ever recorded in 1939. The rise in the 1940 figures checked the decline, but provisional figures indicate another decrease to 10.7 in 1941. Nevada had the largest increase in deaths in 1940, New Mexico the largest decrease.

Infant mortality decreased slightly from 48 per 1,000 population in 1939 to 47.9 in 1940. There were 91,935 infant deaths in 1940; in 1939 there were 91,163. Since 1920 the infant death rate has steadily declined and during the four years, 1936-40, it took an impressive drop from 57.1 to the 47.9 rate of 1940. Provisional 1941 figures show another drop to 46.2. Infant death rates are usually higher in the rural areas and lowest in cities of 100,000 or more population.

Marriages in the year 1940 hit a record-breaking top figure of some 1,565,000. This was even higher than the figure for 1920, when the return of the A.E.F. from France was followed by so great an increase in marriages that the rate rose to 12 marriages per 1,000 population. The Selective Service Act was considered to have had considerable influence on the 1940 marriage rate, which was estimated by the Bureau of the Census to be 11.9 per 1,000 population. The total 1940 figure, however, topped the 1920 total.

The 1940 increase was followed by a rush to the marriage license bureaus in 1941, especially after the entry of the United States into World War II. The few weeks following the attack on Pearl Harbor witnessed a great surge of marriages in the large cities up to 150 per cent over the same period in 1940. Men in uniform expecting to be sent away and soon separated from their girls accounted for the greatest increase. Others were draft evaders seeking dependency deferments through marriage. Still others were defense workers sure of steady jobs that would permit them to marry.

See Table I (p. 720) for deaths from selected causes in the United States in 1940 and 1939. See Table 2 (p. 721) for total figures and rates by States for births, deaths, infant deaths, and deaths from motor vehicle accidents. All rates for 1940

are based on enumerated populations as of April 1, 1940.

For populations and other statistics see articles on each State, Territory, and country. For prison populations, see PRISONS. For comment on infant and maternal deaths, see CHILDREN'S BUREAU.

VITAMINS. See BIOLOGICAL CHEMISTRY, PSYCHIATRY. Compare NUTRITION.

VOCATIONAL TRAINING. See CIVILIAN CONSERVATION CORPS; EDUCATION; NATIONAL YOUTH ADMINISTRATION; PSYCHOLOGY; SCHOOLS; topics listed under DEFENSE TRAINING.

VOLUNTEER AND COMMUNITY PARTICIPATION, Division of. See CIVILIAN DEFENSE, OFFICE OF.

WAGE AND HOUR DIVISION. This Division of the Department of Labor administers the Fair Labor Standards Act of 1938 or Federal Wage and Hour Law. (For details, see YEAR BOOK for 1940.)

Employers have been slow in realizing that the law, under its broad terms, applied to their employees. Other employers did not go along with the Division's position on "hours worked" and "waiting time." Exemptions were misinterpreted by many industries. As a result, the 68,000 inspections made in 1941 by the Division's fourteen regional staffs resulted in more than \$30,000,000 restitution to about 600,000 workers. One minor amendment to the Act was passed in 1941 changing a little-used provision for contracts guaranteeing an annual wage.

Principal change in enforcement policy during

the year was in regard to drawing a line between retail and service establishments, whose employees are exempt, and non-retail merchandise and service establishments whose employees are entitled to a minimum wage and overtime. The change increased the percentage of retail sales and services necessary to qualify the establishment as exempt. Percentage of retail sales or services (as opposed to commercial and wholesale) previously held by the Administrator to be necessary for exemption was 50 per cent. This was increased to 75 per cent, and at the same time, interpretation of "retail sales" or "service" was liberalized to include some sales or service to industrial or commercial purchasers. Such sales must be of articles or services commonly sold both to business and private purchasers and must be in a quantity or at a price similar to sales to private purchasers.

All employers under the Act must keep records of employment prescribed by the Administrator. These Record Keeping Regulations were revised in 1941 and may be obtained at the Division's regional offices.

At the close of the year, three issues regarding the law were before the Supreme Court for decision. The first was a dispute over the Division's interpretation of the provision requiring payment of not less than time and one-half the "regular rate" of pay. The Division has adopted the view that Congress intended each hour worked beyond the statutory maximum should be paid for at one and one-half times the amount paid for each hour below the maximum. Hence, where an employee is not em-

TABLE 1—NUMBER OF DEATHS (EXCLUSIVE OF STILLBIRTHS) FROM EACH CAUSE, AND DEATH RATES (NUMBER PER 100,000 POPULATION) UNITED STATES, 1939 AND 1940

Cause of death	Number of deaths		Death rate	
	1940	1939	1940	1939
All causes	1,417,269	1,387,897	1,076.4	1,060.4
Typhoid and paratyphoid fever	1,443	2,001	1.0	1.5
Cerebrospinal (meningococcus) meningitis	604	863	0.5	0.7
Scarlet fever	668			
Whooping cough	2,926			
Diphtheria	1,457			
Tuberculosis (all forms)	60,428	61,609	45.9	47.1
Tuberculosis of respiratory system	55,576	55,716	41.6	42.6
Dysentery	2,460	2,537	1.9	1.9
Malaria	1,442	1,761	1.1	1.3
Syphilis (all forms)	19,006	19,604	14.4	15.0
Measles	706	1,174	0.5	0.9
Poliomyelitis and polioencephalitis (acute)	1,026	773	0.8	0.6
Cancer (all forms)	168,335	153,846	120.3	117.5
Cancer of the digestive organs and peritoneum	72,742	71,690	55.2	54.8
Cancer of female genital organs	21,104	20,737	3.3	3.2
Cancer of the breast	15,488	14,868	11.8	11.4
Acute rheumatic fever	1,725	1,733	1.3	1.3
Diabetes mellitus	35,015	33,395	26.6	25.5
Exophthalmic goiter	3,659	3,676	2.8	2.8
Pellagra (except alcoholic)	2,123	2,419	1.6	1.8
Alcoholism (ethyilism)	2,531	2,558	1.9	2.0
Intracranial lesions of vascular origin	119,753	114,967	90.9	88.0
Other diseases of the nervous system, etc.	14,145	14,207	10.7	10.9
Diseases of the ear, nose, and throat	7,006	7,521	5.3	5.8
Chronic rheumatic diseases of heart	27,430	26,211	20.8	20.1
Diseases of coronary arteries and angina pectoris	101,463	89,423	77.1	68.5
Diseases of the heart (other forms)	256,298	245,000	194.7	187.6
Bronchopneumonia	34,539	35,524	26.2	27.1
Lobar pneumonia	33,169	38,299	25.2	29.3
Pneumonia (unspecified)	4,660	3,810	3.5	2.9
Influenza	20,157	21,464	6.0	6.1
Ulcer of stomach or duodenum	8,948	8,875	6.8	6.8
Diarrhea, enteritis, etc.	13,573	15,128	10.3	11.6
Appendicitis	12,999	14,113	9.9	10.8
Hernia and intestinal obstruction	11,877	12,267	9.1	9.4
Cirrhosis of the liver	11,286	10,904	8.6	8.3
Biliary calculi, etc.	7,883	8,087	6.0	6.2
Nephritis	107,351	108,512	81.5	83.1
Diseases of the prostate	8,775	8,635	6.7	6.6
Diseases of pregnancy, childbirth, and puerperium	8,876	9,151	6.7	7.0
Puerperal septicemia	3,626	3,834	2.8	2.9
Puerperal toxemias	2,250	2,232	1.7	1.7
Congenital malformations	13,143	12,413	10.0	9.5
Premature birth	32,346	32,251	24.6	24.7
Suicide	18,907	18,511	14.4	14.1
Homicide	8,208	8,394	6.2	6.4
Motor-vehicle accidents	34,501	32,386	26.2	24.8
Other accidents	62,384	60,237	47.4	46.1
All other causes	141,948	137,782	107.8	105.5

TABLE 2—BIRTHS, DEATHS, INFANT DEATHS, AND MOTOR VEHICLE FATALITIES BY STATES, 1940

	Total births	Birth rate ^a	Total deaths	Death rate ^a	Total infant deaths ^b	Infant death rate ^b	Motor vehicle Deaths	Death rates
United States	2,147,985	18.0	1,417,268	10.8	91,935	47.9	34,501	26.2
Alabama	63,356	22.4	29,915	10.6	3,850	62.3	603	21.3
Arizona	11,709	23.5	5,748	11.5	957	81.7	241	48.3
Arkansas	(#)	(#)	(#)	(#)	(#)	(#)	304	15.6
California	111,942	16.3	80,309	11.7	(#)	(#)	3,018	48.7
Colorado	21,281	19.0	12,530	11.2	1,268	59.6	372	33.1
Connecticut	(#)	(#)	(#)	(#)	(#)	(#)	345	20.2
Delaware	4,418	16.7	3,246	12.3	223	50.5	95	35.6
District of Columbia	15,200	22.9	8,656	13.1	708	46.6	150	22.6
Florida	32,781	17.5	22,833	12.2	1,791	54.6	746	39.3
Georgia	63,820	20.5	31,884	10.2	3,025	56.8	824	26.4
Idaho	11,781	22.5	4,901	9.4	483	41.0	198	37.7
Illinois	121,610	15.4	87,406	11.1	(#)	(#)	2,321	29.4
Indiana	60,425	17.7	40,252	11.8	2,480	41.0	1,225	35.7
Iowa	45,164	17.8	25,858	10.2	1,584	35.1	502	22.1
Kansas	29,327	16.3	18,609	10.3	1,124	38.3	484	26.9
Kentucky	63,841	22.5	29,333	10.3	3,085	48.3	773	27.2
Louisiana	50,253	21.3	24,753	10.5	3,164	63.0	571	24.2
Maine	14,840	17.6	10,719	12.7	794	53.5	190	22.4
Maryland	31,002	17.1	22,150	12.2	1,600	48.4	530	29.1
Massachusetts	(#)	(#)	(#)	(#)	(#)	(#)	675	15.6
Michigan	97,694	18.6	51,957	9.9	4,019	41.1	1,722	32.8
Minnesota	53,304	19.1	26,682	9.6	1,746	32.8	622	22.3
Mississippi	52,576	24.1	22,895	10.5	2,759	52.5	453	20.7
Missouri	65,062	17.2	44,376	11.8	2,878	44.2	822	21.7
Montana	11,418	20.6	5,740	10.4	519	45.5	157	28.1
Nebraska	22,577	17.2	12,800	9.7	680	30.1	254	19.3
Nevada	2,227	20.2	1,472	13.4	107	48.0	86	78.0
New Hampshire	8,149	16.6	6,411	13.1	311	38.2	125	25.4
New Jersey	58,559	14.1	45,116	10.9	2,100	35.9	955	23.0
New Mexico	14,323	27.1	5,416	10.2	1,409	98.4	215	40.4
New York	197,414	14.8	150,187	11.2	7,350	37.2	2,466	18.3
North Carolina	80,971	22.7	32,194	9.0	4,646	57.4	1,014	28.4
North Dakota	13,379	20.9	5,045	7.9	551	41.2	116	18.1
Ohio	109,408	15.9	76,375	11.1	4,163	38.1	2,119	30.7
Oklahoma	44,315	19.0	20,423	8.8	2,215	50.0	489	20.9
Oregon	17,704	16.3	12,279	11.3	687	33.2	377	34.6
Pennsylvania	151,232*	16.7	109,960	11.1	7,025	42.8	2,185	22.1
Rhode Island	10,595	14.9	7,956	11.2	409	38.6	91	12.8
South Carolina	34,579*	21.8	16,655*	10.5	2,469*	71.4	609	32.1
South Dakota	12,159	19.0	5,666	8.8	453	37.3	100	15.6
Tennessee	62,456	21.5	30,138	10.4	3,009	48.2	579	19.9
Texas	126,325	19.7	62,952	9.8	8,587	68.0	1,754	27.3
Utah	13,448	24.5	4,901	8.9	541	40.2	186	33.8
Vermont	6,608	18.5	4,482	12.5	261	39.5	87	24.2
Virginia	53,863	20.2	29,500	11.1	3,196	59.3	850	31.7
Washington	28,428	16.5	20,097	11.7	1,000	35.2	532	30.6
West Virginia	41,455	21.8	17,468	9.2	2,211	53.3	391	20.6
Wisconsin	(#)	(#)	(#)	(#)	(#)	(#)	782	32.8
Wyoming	5,007	20.3	2,132	8.6	234	46.7	136	54.2

^a Per 1,000 estimated population ^b Under one year of age. ^c Per 1,000 live births. ^d Per 100,000 estimated population. (#) Data not reported * Incompletely reported

played by the hour it is necessary to translate his regular compensation into its equivalent regular hourly rate. In *Fleming v. A. H. Belo Corp.*, concerning salaried employees of a newspaper, the Court is asked to pass on the Division's construction of the Statute in this respect.

Two cases—*Fleming v. Lowell Sun Co.* and *Cudahy Packing Co. of Louisiana v. Fleming*—involve the Administrator's power of subpoena in connection with investigations. Two other cases—*Williams v. Jacksonville Terminal Co.* and *Pickett v. Union Terminal Co.*, both concerning red caps—deal with the question of whether tips are wages.

During 1941, wage orders were issued establishing minimum wages of 40 cents an hour (\$16.00 for the 40-hour week) for employees engaged in manufacturing garments, woolen goods, shoes, furniture, jewelry, rubber, drugs, medicines, cosmetics, enameled utensils, carpets and rugs, portable lamps and shades, and in gray iron foundries. A minimum of 37½ cents an hour was established in textile manufacturing and embroidery work; 36 cents an hour for all trunk-line railroad employees and workers in seamless hosiery mills; 35 cents an hour for lumber and wood workers, luggage and leather goods manufacturing; 34 cents an hour in brick plants; and a range of 36, 38, and 40 cents an hour for workers making paper products. Several of these minima, notably the textile and garment rates, were increases from previous wage order rates. For instance, the first textile wage order prescribed at

least 32½ cents an hour; the 1941 wage order, 37½ cents an hour. It is estimated that these wage orders issued in 1941 increased the hourly wage rate of almost a million workers.

THOMAS W. HOLLAND.

WAGES. See LABOR CONDITIONS; LABOR LEGISLATION; WAGE AND HOUR ADMINISTRATION.

WAKE ISLAND. A possession of the United States in the central Pacific, 2,130 miles west of Hawaii, and consisting of the three small islets of Wake, Peale, and Wilkes enclosing a lagoon. Area, 4 square miles. In 1935 a base was established for the transpacific service of Pan American Airways. During 1939 the U.S. Congress appropriated special funds for the construction of a naval air base and submarine base. Further funds for widening the ship channel into the lagoon to accommodate large seaplane tenders and submarines were voted in March, 1941. Effective May 15, 1941, the islets were designated a "naval defensive sea area" by Presidential proclamation. Unauthorized vessels and aircraft were barred from a three-mile zone around them. Japanese air and naval forces attacked the garrison of less than 400 U.S. Marines beginning Dec. 8, 1941, and overcame their heroic resistance on December 22. See WORLD WAR.

WALES. See GREAT BRITAIN under Area and Population.

WALLIS ARCHIPELAGO. See NEW CALEDONIA.

WAR. See WORLD WAR. For CAUSES OF WAR, WAR PSYCHOSIS, see PSYCHIATRY, PSYCHOLOGY.

WAR DEBTS. No payments were made during 1941 on the indebtedness to the United States of foreign governments under the funding and moratorium agreements concluded after World War I. On May 1, 1941, Finland undertook to pay in 10 annual payments with interest at 3 per cent the sum of \$235,398 on which payment was postponed Dec. 15, 1940. However the U.S. Congress on June 12 gave Finland the option to postpone payment of amounts due the U.S. Treasury during the period Jan. 1, 1941, to Dec. 31, 1942, and this option was accepted. War debt payments in default as of Nov. 15, 1941, are shown in Table I.

I. TOTAL AMOUNTS DUE AND NOT PAID, AS OF NOV. 15, 1941

Country	Funding agreements		Moratorium	Total
	Principal (\$1,000)	Interest (\$1,000)	agreements annuities (\$1,000)	
Belgium.....	\$40,900	\$64,146	\$7,751	\$112,797
Czechoslovakia.	25,170	.....	2,925	28,095
Estonia.....	1,146	5,111	585	6,843
France.....	490,459	385,228	48,750	924,437
Germany ¹ ...	2,760	.....	208	2,969
Great Britain...	281,000	1,273,649	155,532	1,710,181
Greece.....	8,167	3,149	1,141	12,457
Hungary ² ...	123	514	67	705
Italy.....	127,900	21,663	14,338	163,801
Latvia.....	463	2,017	244	2,725
Lithuania....	416	1,789	218	2,404
Poland.....	13,632	63,978	7,299	84,910
Rumania ³ ...	12,075	3,630	780	16,485
Yugoslavia....	3,737	539	.....	4,276
Total.....	\$1,007,650	\$1,825,398	\$239,842	\$3,072,891

¹ Austrian debt only.

² The Hungarian Government has deposited with the foreign creditors' account at the Hungarian National Bank an amount of Hungarian currency equivalent to the interest payments due from Dec. 15, 1932, to June 15, 1937. The debt funding and moratorium agreements with Hungary provide for payment in dollars in the United States.

³ Excludes the amount of \$100,000 which the Rumanian Government paid to the United States Treasury on June 15, 1940, as "a token of its good faith and of its real desire to reach a new agreement" covering Rumanian indebtedness to the United States.

Germany again defaulted on payments due the United States under the debt agreement of June 23, 1930, covering costs of the American army of occupation, and the mixed claims awards. As of June 30, 1941, the total German

indebtedness under these agreements was 3,160,-221,405 reichsmarks, or \$1,274,517,293, converted at 40.33 cents to the reichsmark. Table II shows the total indebtedness of foreign governments to the United States under the war debt agreements and the total payments received as of Nov. 15, 1941.

WAR DEPARTMENT, U.S. See MILITARY PROGRESS; WORLD WAR. For the Corps of Engineers, see FLOOD CONTROL; RIVERS AND HARBORS. The Secretary of War in 1941 was Henry L. Stimson.

WAR INFORMATION, Committee on. See FACTS AND FIGURES, OFFICE OF.

WAR LABOR BOARD. See LABOR CONDITIONS under Governments and Labor Disputes; NATIONAL DEFENSE MEDIATION BOARD.

WAR MATERIALS. See topics listed under NATIONAL DEFENSE.

WARM SPRINGS FOUNDATION, Georgia. See PHILANTHROPY.

WAR PRODUCTION BOARD (WPB). A Federal agency charged with general direction of the U.S. Government's war procurement and production program, established within the Office for Emergency Management by executive orders signed January 16 and January 24, 1942. It absorbed the functions and powers of the Office of Production Management (see PRODUCTION MANAGEMENT, OFFICE OF) and of the Supply Priorities and Allocations Board (q.v.), both of which were abolished.

The Board consists of a chairman appointed by the President, the Secretary of War, the Secretary of the Navy, the Federal Loan Administrator, the Lieutenant General in charge of War Department Production, the director of the Labor Division of the War Production Board, the Administrator of the Office of Price Administration, the chairman of the Board of Economic Warfare, and the Special Assistant to the President supervising the defense aid program.

President Roosevelt appointed Donald Nelson, former director of the Priorities Division of the Office of Production Management, as chairman of the War Production Board. With the advice and assistance of other members of the Board, the chairman was empowered to determine the policies, plans, procedures, and methods of the several Federal departments, establishments, and agencies in respect to war procurement and production. The Army and Navy Munitions Board was required to report to the President through him. The various executive orders establishing and governing other agencies engaged in war production and procurement were amended in accordance with Executive Order 9024 establishing the War Production Board.

Mr. Nelson on January 26 established nine divisions of the War Production Board. The Production Division took over the functions, powers, and personnel of the Division of Production, Division of Contract Distribution, and Tax Amortization Committee of the Office of Production Management. The Division of Industry Operations was subdivided into the Bureau of Priorities, the Bureau of Industry Branches, and the Bureau of Industry Advisory Committees. They assumed, respectively, the functions and powers of the Priorities Division, Industrial Branches, and Bureau of Industry Advisory Committees of the Office of Production Management. To the Labor Division of the WPB were transferred the President's Committee on Fair Employment Practice, the Building Trades Stabilization Board of Review, the func-

II. OUTSTANDING WAR DEBTS AND TOTAL PAYMENTS RECEIVED, NOV. 15, 1941

Country	Total indebtedness (payments on principal deducted)	Total payments received
Armenia.....	\$24,999,095.85	.....
Belgium.....	470,204,713.74	\$52,191,273.24
Cuba.....	.....	12,286,751.58
Czechoslovakia	165,855,717.87	20,134,092.26
Estonia.....	22,198,846.28	1,248,432.07
Finland....	5,413,044.53	6,050,689.77
France.....	4,297,758,682.70	486,075,891.00
Germany (Austrian indebtedness)...	26,020,579.44	862,868.00
Great Britain...	5,805,850,288.81	2,024,848,817.09
Greece.....	35,337,865.42	4,127,056.01
Hungary.....	2,494,151.10	537,263.44
Italy.....	2,032,082,255.43	100,829,890.16
Latvia.....	9,154,628.45	761,549.07
Liberia.....	.....	36,471.56
Lithuania....	8,196,754.04	1,237,956.58
Nicaragua.....	.....	168,575.84
Poland.....	277,731,410.31	22,646,297.55
Rumania.....	67,684,695.39	4,791,007.22 ¹
Russia.....	414,252,222.20	5,750,311.88
Yugoslavia....	62,164,218.78	2,588,771.69
Total.....	\$13,730,365,520.39	\$2,750,173,756.01

¹ Excludes \$100,000 paid by Rumanian Government June 15, 1940, as "a token of its good faith."

tions, powers, and personnel of the Labor Division, and the personnel of the Office of the Associate Director General, of the Office of Production Management. In addition the chairman established a Purchases Division, Materials Division, Civilian Supply Division, Legal Division, Statistics Division, Administrative Division, and Bureau of Industrial Conservation to perform the functions transferred from similar divisions of the Office for Production Management.

According to Executive Order 9024, the chairman of the WPB was authorized to exercise the powers conferred upon him "through such officials or agencies and in such manner as he may determine; and his decisions shall be final." In accordance with this, Mr. Nelson on January 27 delegated to the Office of Price Administration (q.v.) full authority to ration all goods and commodities sold on the retail market and any products sold to ultimate consumers for the satisfaction of personal needs. He also vested in James S. Knowlson, Director of the Division of Industry Operations in the WPB, full authority to operate the priorities system and to administer regulations under requisitioning acts. See NATIONAL DEFENSE MEDIATION BOARD.

WAR RELIEF ACTIVITIES IN THE UNITED STATES. The legion of war relief organizations in the United States put in a busy year throughout 1941. No conceivable method of raising money and supplies for the victims of war was overlooked. There were benefit dances, testimonial dinners, clothing drives, and volunteer sewing for children. College fraternities and sororities presented ambulance and surgical units for shipment to British hospitals. College students raised funds for student refugees. Restaurant employees mobilized plans to help feed civilian war victims. The public was urged to eat economical meals and donate the money thus saved to help Allied war prisoners. Christmas gift shops were opened and the proceeds turned over to the various war relief organizations. There were art exhibits and jewelry auctions. Whole towns raised funds for beleaguered towns in Europe. The Camp Fire Girls aided the canteen services. Merchants and salesmen sent mobile kitchen units. C.I.O. unions gave benefits to aid suffering; various specified unions bought ambulances, drugs, and surgical equipment and one sent a mobile X-ray unit. There was even a drive to enlist old automobile license plates into double duty: to swell the nation's dwindling scrap iron pile, and to aid war relief.

In December, 1941, there were 325 organizations dedicated to the relief of war victims in belligerent countries or to the relief of refugees driven out of those countries, registered with the Department of State. Registration gives them the right to solicit and collect contributions to be used "for medical aid and assistance or for food and clothing to relieve human suffering." The 325 societies listed include groups organized from Sept. 6, 1939, through December, 1941; 97 new organizations came into existence during the year and the registrations of 20 were revoked either at their own request for lack of funds or because their usefulness had come to an end or because they had amalgamated with larger groups, or for unsatisfactory management of funds.

Total funds received by all organizations, exclusive of the Red Cross (q.v.), amounted to \$48,399,563. Funds spent for relief in specific countries totaled \$37,093,682. The estimated value of contributions other than cash was \$14,201,362.31; \$5,761,158 was spent for administration, publicity,

and campaigns. The unexpended balance on December 31, including relief goods bought and still on hand, was \$5,546,498. See ART; PHILANTHROPY; REFUGEES. For the work of specific organizations, see the reports under SOCIETIES.

WASHINGTON. A Pacific State. Area: 68,192 sq. mi., including 1,215 sq. mi. of inland water, but excluding Pacific coastal waters, 226 sq. mi.; Puget Sound, 561 sq. mi.; and parts of the Straits of Juan de Fuca and Georgia, 1,610 sq. mi. Population: (1940 census) 1,736,191. The urban population comprises 53.1 per cent of the total (U.S. average, 56.5 per cent); non-white population, 2.2 per cent (U.S. average, 10.2); elderly (65 years and over), 8.2 per cent. Washington ranks 19th among the States in area, 30th in population, 34th in density, with an average of 25.9 persons per square mile. The capital is Olympia with 13,254 inhabitants; largest city, Seattle, 368,302. There are 39 counties and 14 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to Mrs. Pearl A. Wanamaker, Superintendent of Public Instruction, there were 335,956 pupils enrolled in the public day schools of Washington during the school year 1940-41, 208,852 in elementary schools, 32,419 in junior high schools, and 94,685 in regular and senior high schools. Teachers numbered 11,495 and received an annual average salary of \$1,695. Total expenditures (warrant account) for the year were \$30,514,975. For higher education, see under *Washington* in the table of UNIVERSITIES AND COLLEGES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 6,185, of which 6,020 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 576,248; 473,048 were private and commercial automobiles, 1,213 busses, and 88,234 trucks and tractor trucks. Gross motor-fuel consumption was 366,348,000 gal. Net motor-fuel tax receipts were \$17,185,000, the rate being five cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$3,728,000.

Railways of all classes extended 5,268 miles (Dec. 31, 1939) 2.24 per cent of the total mileage in the United States. Class I steam railways (4,916 miles) reported 14,121,742 tons of revenue freight originating in Washington in 1940 and 13,095,284 tons terminating in Washington. There are 53 airports and landing fields in the State (18 lighted fields) and 16 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 381 civil aircraft in the State and 2,121 airline transport, commercial, and private pilots (1,757 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 3,549,400, as compared with 3,544,700 acres in 1940. According to the latest census, there are 81,686 farms, valued at \$593,366,445, averaging 185.9 acres each. Farm population numbered 339,950 or 19.6 per cent of the total. Leading crops with production in 1941 were: Wheat, \$53,805,000, 61,142,000 bu.; apples, \$31,185,000, 28,350,000 bu.; hay, \$18,202,000, 1,969,000 tons; commercial truck crops, \$7,303,000; pears, \$7,272,000, 6,099,000 bu.; peas, \$6,825,000, 3,250,000 bu.; potatoes, \$5,124,000, 8,400,000 bu.

Manufacturing. According to the latest census (for the year 1939) the total value of manufactured products was \$636,649,809; 8,240 establishments

employed 90,324 wage earners who received \$118,326,333 in wages for the year.

Mineral Production. The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$31,590,023 or .75 per cent of the total for the United States. Leading items in 1939 were: sand and gravel, 11,918,217 short tons valued at \$6,048,619 (8,987,761 short tons, \$4,278,251, for 1940); coal, 1,690,000 short tons, \$5,256,000 (1,688,000 short tons for 1940).

Trade. According to the 1940 census there were 3,584 wholesale establishments in Washington, employing 27,425 persons, reporting net sales for 1939 of \$767,731,000 and annual pay roll of \$44,619,000. There were 26,682 retail stores with 66,852 employees, reporting sales of \$668,790,000 and pay roll of \$75,405,000. Service establishments numbered 10,256, employing 19,351 persons for \$17,175,000 per year, and reporting a business volume amounting to \$53,510,000. The leading business center of the State is Seattle which reported wholesale sales of \$451,292,000, retail sales of \$208,537,000, and \$24,675,000 receipts for its service establishments. Spokane reported sales of \$76,081,000 wholesale and \$65,583,000 retail; Tacoma, \$60,111,000 and \$55,065,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Washington was \$42,935,000. Under the Social Security program, financed by Federal funds matching State grants, 57,072 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$32.45 (U.S. average pension, \$21.08); 12,653 dependent children in 5,309 families received average monthly payments of \$36.23 per family (U.S. average, \$32.73); and 1,041 blind persons received \$34.33 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 9,605 and received \$15.77 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 1,684 (\$112,000); NYA student work program, 6,029 (\$49,000); NYA out-of-school work program, 5,476 (\$120,000); WPA, 16,366 (\$1,290,000); other Federal construction projects, 38 (\$3,000); regular Federal construction projects, 25,121 (\$4,268,000). The Farm Security Administration certified subsistence payments totaling \$10,000 for the month to 402 cases.

Legislation. The Legislature convenes in regular session on the second Monday of January in odd years. It is composed of 46 Senators (37 Democrats and 9 Republicans in 1941) and 99 Representatives (68 Democrats and 31 Republicans).

The 27th Legislature adjourned after a day and a half of overtime session, having made record appropriations of \$259,074,652 and enacted a record number of bills—236. Principal reason for the all-time high appropriations was approval of the social security law. The extension of the session beyond the sixty-day limit, with the clocks stopped in the Capitol to avoid the deadline, was a deadlock over the highway bill. The proposed bill, which would have constituted a return to the "pork barrel" system, was finally defeated, largely because members could not agree on details. The accomplishments of the session were summarized as follows in the *Seattle Times*, Mar. 23, 1941:

Education. Appropriated \$39,000,000 for common schools, a new high mark; gave them \$3,700,000 additional to erect buildings and pay teachers, principally in

national defense areas; appropriated \$200,000 more for State aid to junior colleges, appropriated \$5,000,000 for vocational training in schools.

Highways. Appropriated an all-time high of \$75,000,000; increased counties' share of the gas tax \$460,000 at the State's expense; created a State Advisory Highway Commission; directed the State to rebuild the Narrows Bridge [vetoed]; lowered license fees on farmers' trucks.

Agriculture. Appropriated \$297,500 to continue fight against Bang's Disease and tuberculosis in dairy herds; provided \$200,000 to fight pear psylla disease; passed Pure Seed Act; exempted agricultural workers from coming under Unemployment Compensation Law.

Taxation. Raised the sales tax from 2 to 3 per cent, at a cost of \$18,000,000 to the taxpayers in the coming biennium; boosted the tax on pinball and slot-machines; enacted gift tax, passed referendum on graduated net income-tax amendment to Constitution; submitted the 40-mill tax limit to the people again as a referendum.

Social Security. Appropriated \$71,000,000 for public welfare, including some \$54,400,000 for old-age pensions, both record amounts; transferred care of crippled children from Social Security Department to Health Department; passed a bill requiring old-age pension unions to file lists of contributors and expenditures; boosted dependent children's allowances; liberalized housing law to permit rural housing projects.

National Defense. Passed bill stiffening law against criminal anarchy, passed bill authorizing counties or State to lease land to government for defense purposes; approved large highway program, including money to improve roads in Tacoma area, passed law requiring employers to hold jobs for draftees; authorized housing authorities to build homes for defense workers; created staff defense council.

Labor. Increased payments to injured laborers under Workmen's Compensation Law by \$2,000,000 for coming biennium; exempted agricultural labor from coming under unemployment compensation protection, extended unemployment compensation to employers of one or more persons instead of eight or more, as at present; set up apprentices council, barred wage "kick-backs" by workers, required slaughterhouse and restaurant inspection, placed State and municipal employees under federal old-age programs if and when Congress enacts similar law; required sheds be built over railroad repair yards.

State Government Reorganization. Transferred all attorneys in state departments to control of attorney general; transferred all post auditing to State auditor, consolidated Labor and Industries and Tax Commission field auditors' staffs.

Finances. Total tax collections in Washington for the fiscal year ending in March, 1941, were \$76,112,000 (1940: \$69,359,000). Total sales taxes amounted to \$47,327,000, including general sales, \$24,364,000, motor fuel, \$17,563,000. Taxes on specific businesses ran to \$6,278,000, general and selective property, \$3,182,000, unemployment compensation, \$11,524,000. Cost payments for the operation of general government totaled \$67,230,000 in 1939, the latest year available. (Revenues for the general government for that year were \$88,413,000.) Cost of operation per capita was \$39.36. Total gross debt outstanding in 1941 was \$20,611,000, as compared with \$8,257,000 in 1932.

Officers and Judiciary. The Governor is Arthur B. Langlie (Rep.), inaugurated in January, 1941, for a four-year term; Lieutenant Governor, Victor A. Meyers; Secretary of State, Mrs. Belle Reeves; Attorney General, Smith Troy; State Treasurer, Otto A. Case; State Auditor, Cliff Yelle. Chief Justice of the Washington Supreme Court is John S. Robinson; there are eight associate members elected by popular vote for six-year terms.

See ENEMY ALIENS; LABOR LEGISLATION.

WASHINGTON, D.C. See AERONAUTICS under *Airports*; ART; ARCHITECTURE under *Government, Commercial, and Defense*; DISTRICT OF COLUMBIA; GARBAGE AND REFUSE DISPOSAL; MUSIC; WATER WORKS.

WATER POLLUTION. See WATERWAYS.

WATER POWER. See ELECTRIC LIGHT AND POWER; CANADA and URUGUAY, under *History*; UNITED STATES under *Canada*.

WATER SUPPLY. See AQUEDUCTS; DAMS; GEOLOGICAL SURVEY; TUNNELS.

WATERWAYS, Inland. A decision of the U.S. Supreme Court, in March, holds that structures within the ordinary high-water limits of navigable streams are at the risk of their owners (all land between these limits being Federal property). Hence, such structures may be destroyed by the Federal government without compensation in improving the streams for navigation. This applies even if the structures do not actually interfere with navigation. Except for the long established ship navigation on the Great Lakes, and the highly controversial projects (still on paper) for the St. Lawrence ship navigation and the Florida ship canal, inland navigation in the United States is for barges and river craft. Both of the above projects were classed as items for the postwar construction program, but later were included for immediate attention as national defense works.

Progress on the St. Lawrence international project for power development and a waterway for ocean shipping between the Atlantic Ocean and the Great Lakes included an agreement between the United States and Canada, signed at Ottawa in March, but subject to approval by Congress. This covered the canal, lock, dam, and power plant at the International Falls (between Lake Ontario and Montreal), new locks at Sault Ste. Marie, and works to equalize the flow over Niagara Falls. The estimated cost (in 1941) is \$266,170,000 for the work at the International Falls, with a grand total of \$409,000,000 (U.S. share \$277,000,000), including enlargement of the Canadian canals to provide a waterway adequate for ocean ships. In June, the International Falls work was classed by the U.S. Office of Production Management as a national defense project. In June, also, the U.S. Senate approved a treaty with Canada permitting both countries to divert more water for power purposes at Niagara Falls until October, 1942. Controversy as to this project bases on the fundamental question whether its enormous cost is justified by its prospective traffic and the prospective demand for power, as to which there is little definite or reliable information. There is doubt also, of its value in the national defense program, since its construction will take at least four years (estimates vary from four to eight years) after it is actually started. In fact, the early agreement gave Canada until 1948 to finish its work on the waterway.

An unusual type of waterway, practically paralleling the coast line by linking up lagoons, streams, and canals, is represented in the New Jersey State Inland Waterway and the Intracoastal Canal. The former extends from Manasquan Inlet south to Cold Spring Harbor, 125 miles, and has a 100-ft. channel with 6 ft. of water. It is planned that the Federal Government may take it over and enlarge it to 300 ft. in width and 12 ft. in depth. An auxiliary project is an extension of three or four miles from Cold Spring Harbor to Delaware Bay, thus enabling light craft to avoid the outside passage around Cape May. The Intracoastal Canal is a Federal project intended to parallel the Gulf coast from Florida to the Rio Grande River. Its section from the Mississippi River at New Orleans, to Corpus Christi, Texas, was completed in December, 1941.

The Illinois Waterway, connecting Lake Michigan at Chicago with the Mississippi River at Grafton, Ill., is being widened from Lockport to Grafton to give a 300-ft. channel with 9 ft. of water. The U.S. Supreme Court denied the request of the State of Illinois to increase the present flow from Lake Michigan during the summers of 1941 and 1942, on account of excessive pollution by sewage. The Court held that the conditions complained of

were offensive but not a menace to public health.

On the Pacific slope, extensive improvements made the Columbia River navigable for craft of 8-ft. draft to Pasco, Wash., 332 miles from the mouth of the river and 242 miles from Portland, Ore. Much work is in progress on channel improvements, and Pasco has been established as the port at head of navigation (see PORTS AND HARBORS). Navigation on the Willamette River is hampered by the 50-ft. falls at Oregon City, 13 miles south of Portland, where a canal with four locks 210 x 40 ft. was built by private interests in 1873 for craft of 8 ft. draft and for the great log rafts floated down the river. These works were acquired by the Federal Government in 1913 and a single lock 400 x 60 ft. is being built to replace the four old locks. On account of the high lift and the shallow water, special means are required to prevent objectionable turbulence when the lock is being filled.

The locks at Sault Sainte Marie, Mich., were blocked for three days in October by the fall of a railroad bridge crossing the canal leading from Lake Superior to the locks (see BRIDGES). The iron-ore traffic through this waterway in 1941 broke all records, with more than 80,000,000 tons, as against the previous record of some 65,000,000 tons in 1929. On the Tennessee River development, the Watts Bar lock was completed in March and the dam in December. The lock is 60 x 360 ft., with a lift of 57 ft. normal and 70 ft. maximum. The dam is 97 ft. high. In September, 1941, there was a channel, at least 6 ft. deep, as far as Chattanooga. This channel was to be extended to Knoxville by 1943, and, by June of 1944, was to be completed to a full depth of 11 ft., to allow vessels of 9 ft. draft to pass from the Ohio River at Paducah, Ky., to Knoxville.

In England, there was a marked revival in canal traffic, owing to the heavy traffic on the railways due to war conditions. A government commission has worked to coordinate canal facilities. Many of the canals are old and neglected, and many are owned by the railroads; these latter it has been proposed to transfer to canal companies. Certain systems have been enlarged and modernized, including cargo-handling equipment at the ports. Steel and concrete barges are being built, and also tug-boats of 90 tons cargo capacity, fitted with oil engines. Canalization of the Thames River by a lock and dam near the mouth has been opposed vigorously by the Port of London Authority, on the ground of interfering seriously with the movement of the immense shipping traffic, interfering with the regimen of the river, and causing serious sewage pollution of the "pool" above the dam, while bombing attacks might block the river traffic entirely.

Germany has greatly increased the use of its canals and rivers, and the government transport authorities have coordinated rail and canal traffic to a considerable extent. The Germans also plan to use the Danube extensively, as vessels of 1,500 tons can operate from the Black Sea to Vienna, and 1,000-ton craft for a long distance above. The Danube-Main-Rhine canal and the Danube-Oder canal will connect with the large rivers of central Europe, and a canal from the Oder to the Adriatic Sea is contemplated. Regulating works are to be built at the "Iron Gates" of the Danube.

While Russia has some 250,000 miles of inland waterways, many of the canal links are small and obsolete. Much improvement work has been done for military and commercial purposes, especially to permit the movement of light naval vessels. The old canal between Leningrad and the Volga is said

to have 43 locks, while its modernization would reduce the number to six. War conditions prevent obtaining reliable information and have undoubtedly upset any plans for waterway development.

See AQUEDUCTS; BRIDGES; COAST GUARD, U.S.; DEFENSE TRANSPORTATION, OFFICE OF; FLOOD CONTROL; FLOODS; PANAMA CANAL; SHIPBUILDING; SHIPPING; SUEZ CANAL; TRANSPORTATION DIVISION.

E. E. RUSSELL TRATMAN.

WATER WORKS AND WATER PURIFICATION. Protection of water supply dams, aqueducts, pumping stations, filtration plants, and reservoirs from sabotage was given the utmost attention. (Jordan, Secretary American Water Works Association, "Public Water Supply in the Civil Defense Program," *Jour. Am. Water Works Assn.*, Jan., 1941; New York. Also "Waterworks Preparedness," a symposium, *Engng. News-Record*, June, 1941; New York.) At numerous army camps and cantonments, air bases, munition and other defense plants, there was great activity in providing ample water supplies. Municipal water works were under pressure to meet increasing water consumption and fire protection needs due to defense industries.

Drought in the Eastern United States depleted water in storage for public water supply and for hydro-electric power. In the 18 States from Maine to Georgia, west to Indiana and Tennessee, comprising an area of 450,000 square miles, stream flow in November averaged about half of the normal. (Records kept by Water Resources Board, U.S. Geological Survey.) Rainfall in the Southwest and Southern California was far above normal.

Drinking water standards for interstate passenger carriers on wheels or afloat are being revised by the U.S. Public Health Service with the aid of a large committee of engineers, chemists, and bacteriologists in other branches of the Federal government and in State health departments and private practice.

Works for supplementing the water supply of the Boston Metropolitan District from tributaries of the Connecticut River are nearly completed. In spite of the drought, storage in the Quabbin Reservoir, begun in 1939, had reached 80 billion gallons in December, 1941. The Quabbin Aqueduct Tunnel, extending 24.6 miles from the Quabbin to the Wachusett Reservoir, was practically completed. The long pressure aqueduct from the Wachusett Reservoir to the Chestnut Hill Reservoir, near Boston, lacked 5½ miles of completion. See AQUEDUCTS.

On the Delaware River project, New York City, 84½ miles of the 85-mile aqueduct, 13½ to 19½ ft. in diameter, had been completed on December 31 and about 64 miles lined with concrete. It had been expected that the 16-mile section from the Kensico Reservoir to the city would be ready for test in the spring of 1942 but work has been delayed for lack of operating equipment due to the national defense and priorities situation. Impounding reservoirs on tributaries of the Delaware River are under construction. On the entire project work to the value of \$140,000,000 has been completed.

Owing to the rapid increase in population of the District of Columbia, due to defense activities, an increase in the water supply is imperative. Requirements for aqueducts, pumping stations, filtration works, distributing reservoirs were studied. At

THE COURSE OF THE COLORADO RIVER AQUEDUCT



Courtesy of The New York Times

Tampa, Fla., over 100 miles of 30- to 14-in. cast-iron water mains are being laid to reinforce the distribution system. Intrusion of salt water into the water supply of New Orleans due to changes in the regimen of the Mississippi River has led to preliminary studies for a supply from Lake Pontchartrain through a 50-mile aqueduct. The city of Chicago has completed two 18-ft. tunnels aggregating 10,000 ft. in length to serve the South District water filtration plant, now under construction. This plant will have a capacity of 320-million gallons a day; two others will bring the filter capacity of the city to a billion gallons daily.

After 18 years of planning and building, the Colorado River Aqueduct of the Metropolitan Water District of Southern California began delivering water on June 18. Its completion is opportune in view of the national defense activities in the Los Angeles district. The aqueduct is 394 miles long and ultimately will deliver a billion gallons a day to Los Angeles and the 12 other cities forming the district. To finance it the 13 cities voted, 5 to 1, in 1931, to issue \$220,000,000 of bonds. Water is pumped from the Colorado River and at relay stations to a total height of 1,600 ft. At La Verne, 30 miles east of Los Angeles, the water is softened and filtered in the first installment of the largest plant of the kind yet projected. In length and capacity the Colorado River Aqueduct surpasses any other in existence. The city of Toronto put into use on November 1 a filtration plant with a daily capacity of 100 million imperial gallons (120 U.S.). The filters and long supply tunnel had been completed earlier but owing to financial conditions, and the fact that the city already had two large filtration plants in use, it was not put into operation earlier.

Water-softening plants for city supplies increased from one in 1905 to 576 on July 1, 1941. These plants served 800 communities with a combined population of nearly ten millions. Nearly half of the plants were located in the Central States. The only softening plant in the East was one at Winchester, Mass. Of the 572 plants for which the source of supply was reported, 381 treat underground and 191 surface water. Chemical precipitation was used to throw down the salts causing hardness in 377 plants while in 199 the salts were absorbed by zeolite. (Olsen, "Census of U.S. Municipal Water Softening Plants," *Jour. Am. Water Works Assn.*, Dec., 1941; New York.) See AQUE-DUCTS; DENTISTRY; TUNNELS.

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WEATHER, WEATHER FORECASTS. See METEOROLOGY; also, AGRICULTURE. For Atlantic Weather Patrol, see COAST GUARD, U.S.

WEEVILS. See ENTOMOLOGY, ECONOMIC.

WELDING. See ELECTRICAL INDUSTRIES.

WELFARE WORK. See COMMUNITY CHESTS AND COUNCILS; COMMUNITY TRUSTS; articles on churches and foundations, as the ROCKEFELLER FOUNDATION; SOCIETIES AND ASSOCIATIONS; WAR RELIEF IN THE UNITED STATES. For government activities in this field, see RELIEF.

WESTERN AUSTRALIA. See AUSTRALIA under *Area and Population*.

WESTERN SAHARA. See SPAIN under *Colonial Empire*.

WESTERN SAMOA. See under SAMOA.

WEST VIRGINIA. A south Atlantic State. Area: 24,181 sq. mi., including 91 sq. mi. of inland water. Popu-

lation: (1940 census) 1,901,974. The urban population comprises 28.1 per cent of the total (U.S. average, 56.5 per cent); non-white population, 6.2 per cent (U.S. average, 10.2); elderly (65 years and over), 5.4 per cent. West Virginia ranks 40th among the States in area, 25th in population, and 13th in density, with an average of 79.0 persons per square mile. The capital is Charleston with 87,914 inhabitants; largest city, Huntington, 78,836. There are 55 counties and 12 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to W. W. Trent, Superintendent of Free Schools, there were 451,053 pupils enrolled in the public schools of West Virginia during the school year 1940-41, 306,942 in elementary schools and 144,111 in secondary schools. Teachers numbered 16,201 and received an annual average salary of \$1,185. Total expenditures for the year were \$27,465,783.

Transportation. State highway mileage in 1939, including streets under State control, totaled 32,872, of which 13,266 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 309,361; 250,294 were private and commercial automobiles, 744 busses, and 51,520 trucks and tractor trucks. Gross motor-fuel consumption was 221,005,000 gal. Net motor-fuel tax receipts were \$10,691,000, the rate being five cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$6,529,000.

Railways of all classes extended 3,847 miles (Dec. 31, 1939) 1.64 per cent of the total mileage in the United States. Class I steam railways (3,128 miles) reported 117,600,111 tons of revenue freight originating in West Virginia in 1940 and 15,037,815 tons terminating in West Virginia. There are 23 airports and landing fields in the State (four lighted fields) and three seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 197 civil aircraft in the State and 946 airline transport, commercial, and private (833 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 1,376,000, as compared with 1,417,400 acres in 1940. According to the latest census, there are 99,282 farms, valued at \$269,827,285, averaging 89.7 acres each. Farm population numbered 532,512 or 28.0 per cent of the total. The leading crops were corn, worth \$11,076,000 and producing 12,307,000 bu., and hay, \$9,645,000, 818,000 tons.

Manufacturing. According to the latest census (for the year 1939) the total value of manufactured products was \$441,840,388; 1,130 establishments employed 74,989 wage earners who received \$88,487,433 in wages for the year.

Mineral Production. The chief minerals produced in 1939, in order of value, were: Coal, 107,938,000 short tons valued at \$189,971,000 (126,302,000 short tons in 1940); natural gas, 159,226,000 M cubic feet, \$63,194,000; petroleum, 3,580,000 bbl., \$6,000,000 (3,444,000 bbl. in 1940). The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$275,562,954 or 6.51 per cent of the total for the United States. West Virginia ranks fourth among the States in value of mineral production.

Trade. According to the 1940 census there were 1,424 wholesale establishments in West Virginia, employing 11,525 persons, reporting net sales for 1939 of \$284,196,000 and annual pay roll of \$17,153,000. There were 18,928 retail stores with 42,-

318 employees, reporting sales of \$404,889,000 and pay roll of \$38,263,000. Service establishments numbered 5,192, employing 6,798 persons for \$5,713,000 per year, and reporting a business volume amounting to \$19,662,000. The leading business center of the State is Charleston which reported wholesale sales of \$67,762,000 and retail sales of \$43,839,000. Wheeling reported \$42,088,000 wholesale and \$31,885,000 retail; Huntington, \$39,907,000 and \$31,217,000 respectively.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in West Virginia was \$32,589,000. Under the Social Security program, financed by Federal funds matching State grants, 19,278 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$14.89 (U.S. average pension, \$21.08); 24,992 dependent children in 9,360 families received average monthly payments of \$24.72 per family (U.S. average, \$32.73); and 862 blind persons received \$18.54 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 12,572 and received \$9.43 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 5,165 (\$342,000); NYA student work program, 6,047 (\$41,000); NYA out-of-school work program, 5,870 (\$127,000); WPA, 26,850 (\$1,389,000); other Federal emergency projects, 31 (\$2,000); regular Federal construction projects, 5,995 (\$969,000). The Farm Security Administration certified subsistence payments totaling \$5,000 for the month to 89 cases.

Legislation. The Legislature convenes in regular session on the second Wednesday of January in odd years. It is composed of 32 Senators (26 Democrats and 6 Republicans in 1941) and 94 Representatives (74 Democrats and 20 Republicans).

The 45th session of the Legislature convened on January 8 and adjourned Mar. 8, 1941. According to the summary of A. Hale Watkins, editor of the *West Virginia Blue Book*, 623 bills were introduced during the session, of which 157 became law. Appropriations voted totaled \$39,664,786 for 1941-42 and \$37,378,016 for 1942-43. Most of the general bills enacted amended existing statutes. Following is a brief summary of bills of more general interest.

Chap. 5 provided for a monument to Booker T. Washington at Malden, at a cost of \$5,000. *Chap. 11* submitted to the voters the "Good Roads Amendment" to the Constitution, limiting use of all revenue derived from motor vehicles and motor fuels to road purposes. *Chap. 20* established a State Court of Claims. *Chap. 26* enacted a Uniform Declaratory Judgments Law. *Chap. 27* amended the law on adoption, establishing greater safeguards for both parents and children.

In the field of education, *Chap. 31* revised bases of teacher certification, abolishing old uniform examination. *Chap. 34* gave more leeway to boards of education in providing free textbooks. *Chap. 36* amended the teachers' retirement law and *Chap. 37* raised basic salaries. *Chap. 38* provided for the teaching of scientific temperance in the schools.

A series of election laws were passed, including *Chap. 41*, providing severe penalties for corrupt and pernicious practices, and *Chap. 43*, establishing a uniform system of permanent registration of voters and creating a State Election Commission as an advisory body to the Secretary of State. *Chap. 45* authorized localities and public bodies to aid projects of local housing authorities of the U.S. government. *Chaps. 49* and *50* respectively authorized housing projects for persons of low income including farmers and for national defense workers.

Chap. 52 provided for the creation of the West Virginia State Guard whenever the National Guard of the State is in active Federal service. *Chap. 61* created a State Council of Defense. *Chaps. 62* and *63* altered the law with regard to mining, the former prohibiting employment of miners in bituminous coal mines unless certified by a "miners' examining board," five such boards being authorized.

Chap. 71 provided \$50,000 per month from liquor profits for State aid to municipalities, to reimburse them for enforcing State laws.

The Child Welfare Law and the Public Assistance Law were amended in *Chaps. 73* and *74* respectively. The latter removed the age requirement for the blind, raised the maximum age grant for both the blind and aged from \$30 to \$40, and made the case records confidential. *Chap. 79* created a State Planning Board, and *Chap. 81* a three-man commission to act jointly with Pennsylvania, Virginia, Maryland, and the District of Columbia with regard to pollution and drainage in the Potomac River Basin. *Chap. 87* made basic changes in the Unemployment Compensation Law, increasing minimum benefits from \$3 to \$6, extending period of benefits from 14 to 16 weeks, and reducing the waiting period from three weeks to one. Employers were exempted from contributing to the Fund on any part of an employee's salary above \$3,000 a year in *Chap. 99*.

Personal income taxes were affected by *Chap. 121*, which permitted payment in three equal installments of taxes over \$10, and *Chap. 122*, which fixed the tax on net incomes at 1 per cent on the first thousand dollars, 2 per cent on the second, 3 per cent on the third, 4 per cent on the fourth, 5 per cent on the fifth, 5½ per cent on the sixth, 6 per cent on the seventh thousand dollars and all income above *Chap. 124* extended for another two years the extra one-cent tax on gasoline, making the tax five cents per gallon.

Under a House Concurrent Legislation there was created an Interim Legislative Committee for the purpose of studying, among other things, mining, conservation, and juvenile court laws, institutional care, Public Lands Corporation, civil service for State employees, and compulsory liability insurance for automobile owners.

Finances. Total tax collections in West Virginia for the fiscal year ending in June, 1940, were \$56,236,000. Total sales taxes amounted to \$30,438,000, including general sales \$18,608,000 (inclusive of collections of gross income and gross receipts taxes on public utilities and other businesses), motor fuel, \$10,690,000. Taxes on specific businesses ran to \$2,018,000, general and selective property, \$783,000, unemployment compensation (1941), \$11,524,000. The net income taxes were \$1,598,000.

Total gross debt outstanding in 1941 was \$78,260,000, as compared with \$89,620,000 in 1932.

Officers and Judiciary. The Governor is Matthew M. Neely (Dem.), inaugurated in January, 1941, for a four-year term; Secretary of State, William S. O'Brien; Attorney General, Clarence W. Meadows; State Treasurer, Richard E. Talbot; State Auditor, Edgar B. Sims. President of the West Virginia Supreme Court of Appeals is James B. Riley; there are four associate members elected by popular vote for 12-year terms.

See FLOODS; PRISONS PAROLE, AND CRIME CONTROL.

WHEAT. The wheat crop in the United States in 1941 was estimated by the U.S. Department of Agriculture at 945,937,000 bu., the largest crop since 1919, more than 16 per cent larger than the 1940 crop of 812,374,000 bu. and substantially above the 1930-39 average of 747,507,000 bu. The total area harvested in 1941, 55,831,000 acres compared with 52,980,000 acres in 1940 and the 10-year average of 55,884,000 acres. The crop was favored by ample moisture for seeding the full intended acreage in the main winter wheat States, small winter loss in most important wheat areas, and the rare occurrence in the same year of nearly optimum weather everywhere for growing and maturing of both winter and spring wheat. The higher than average yields, 16.9 bu. per acre versus 15.3 in 1940, contributed more to the heavy crop than did the moderate increase in harvested acreage. Acreages harvested, average acre yields, and total production, respectively, were for winter wheat 39,547,000 acres, 17 bu., 671,293,000 bu.; durum 2,546,000 acres, 16.4 bu., 41,800,000 bu.; and other spring wheat 13,738,000 acres, 16.9 bu., 232,841,000 bu. States leading in winter wheat production

included Kansas 173,092,000 bu., Washington 49,941,000, Ohio 48,950,000, Oklahoma 48,010,000, Illinois 35,300,000, Indiana 34,545,000, Nebraska 34,428,000, Montana 27,762,000, and Texas 27,186,000 bu. Spring wheat production in leading States was in North Dakota 146,198,000 bu., Montana 40,477,000, South Dakota 33,480,000, Minnesota 17,958,000, and Washington 11,201,000 bu. The durum crop included 34,238,000 bu. harvested in North Dakota, 6,384,000 in South Dakota, and 1,178,000 bu. in Minnesota. The season average price per bu. (preliminary) received by farmers was 95.6¢ and the value of production was estimated at \$904,008,000 in 1941 compared to 68.2¢ and \$554,168,000 in 1940.

World wheat production in 1941, excluding U.S.S.R. and China, was estimated at 3,960,000,000 bu., measurably below the 4,003,000,000 bu. grown in 1940.

See AGRICULTURE under *Crop Production*; ENTOMOLOGY, ECONOMIC; PUBLIC HEALTH SERVICE under *National Nutrition*; TARIFF COMMISSION, U.S. See also, CANADA under *History*; COUNTRIES under *Production*.

WHITE RUSSIAN SOVIET SOCIALIST REPUBLIC. See UNION OF SOVIET SOCIALIST REPUBLICS under *Area and Population*.

WHOLESALE TRADE. See BUSINESS REVIEW; CONSUMERS' COOPERATIVES; MARKETING.

WHOOPING COUGH. See PUBLIC HEALTH SERVICE.

WILDLIFE. See FISH AND WILDLIFE SERVICE.

WIND DIRECTION, WIND-ROSES. See METEOROLOGY.

WINDWARD ISLANDS. An insular group in the British West Indies comprising the colonies shown in the accompanying table.

Colony (Capital)	Sq. mi.	Pop (1939)
Dominica* (Roseau)	304	51,959
Grenada (St. George's)	133 ^b	90,085
St. Lucia (Castries)	233	69,727
St. Vincent (Kingstown)	150 ^c	60,000
Windward Islands (St. George's)	820	271,771

* Dominica was transferred from the Leeward Islands to the Windward Islands on Jan. 1, 1940. ^b Includes the islands—Carrisou, etc.—of the southern Grenadines (13 sq. mi.). ^c Includes the islands—Bequia, Canouan, Mayreau Mustique, and Union—of the northern Grenadines (17 sq. mi.).

Chief towns: St. George's (capital), 4,629 inhabitants (1921 census); Roseau, 9,000; Castries, 21,124; Kingstown, 4,269.

Production and Trade. Arrowroot, cotton, sugar, molasses, rum, copra, cacao, peanuts, cassava, spices, limes, citrus fruits, and vegetables are the main products. Trade of the four colonies (1939): £831,413 for imports and £773,267 for exports. Roads (1939): 1,216 miles.

Government. Finance (1939): £469,265 for revenue and £486,067 for expenditure. Public debt (1939): £577,438. There is one governor for all the four colonies but there is no common legislature and each colony has its own executive and legislative councils. Governor and Commander-in-Chief, Sir Henry Popham (appointed Jan. 19, 1937). See ST. LUCIA; BRITISH WEST INDIES under *History*.

WINE. See LIQUOR PRODUCTION.

WISCONSIN. An east north central State. Area: 56,154 sq. mi., including 1,439 sq. mi. of inland water, but excluding parts of Lake Michigan, 7,387 sq. mi.; and Lake Superior, 2,675 sq. mi. Population: (1940 census) 3,137,587. The urban population comprises 53.5 per cent of the total (U.S. average, 56.5 per cent); non-white population,

0.8 per cent (U.S. average, 10.2); elderly (65 years and over), 7.7 per cent. Wisconsin ranks 25th among the States in area, 13th in population, and 19th in density, with an average of 57.3 persons per square mile. The capital is Madison with 67,447 inhabitants; largest city, Milwaukee, 587,472. There are 71 counties and 33 cities of more than 10,000 inhabitants (see article on POPULATION in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see VITAL STATISTICS.

Education. According to John Callahan, Superintendent of Public Instruction, there were 535,165 pupils enrolled in the public schools of Wisconsin during the school year 1939-40, 374,854 in elementary schools and 160,311 in secondary schools. Teachers numbered 21,577 and received an annual average salary of \$1,400. Total expenditures for the year were \$51,791,020. For higher education, see *Wisconsin* under UNIVERSITIES.

Transportation. State highway mileage in 1939, including streets under State control, totaled 9,934, of which 9,930 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 913,055; 750,953 were private and commercial automobiles, 711 busses, and 149,251 trucks and tractor trucks. Gross motor-fuel consumption was 589,789,000 gallons. Net motor-fuel tax receipts were \$21,311,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$13,075,000.

Railways of all classes extended 6,667 miles (Dec. 31, 1939) 2.84 per cent of the total mileage in the United States. Class I steam railways (5,651 miles) reported 15,104,973 tons of revenue freight originating in Wisconsin in 1940 and 23,187,866 tons terminating in Wisconsin. There are 47 airports and landing fields in the State (15 lighted fields) and 19 seaplane bases and anchorages. On July 1, 1941, according to the Civil Aeronautics Authority, there were 454 civil aircraft in the State and 1,322 airline transport, commercial, and private pilots (1,120 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 9,856,000, as compared with 9,882,400 acres in 1940. According to the latest census, there are 186,735 farms, valued at \$1,188,559,407, averaging 122.5 acres each. Farm population numbered 883,882 or 28.2 per cent of the total. Leading crops with production in 1941 were: Corn, \$68,344,000, 91,125,000 bu.; hay, \$55,255,000, 6,907,000 tons; oats, \$31,781,000, 75,669,000 bu.; barley, \$11,299,000, 16,864,000 bu.; commercial truck crops, \$10,995,000; potatoes, \$8,052,000, 14,378,000 bu.

Manufacturing. According to the latest census (for the year 1939) the total value of manufactured products was \$1,604,507,356. For details, see 1940 YEAR BOOK.

Mineral Production. The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$12,704,942 or only three-tenths per cent of the total for the United States. Chief items were stone, iron ore, sand, and gravel.

Trade. According to the 1940 census there were 4,798 wholesale establishments in Wisconsin, employing 26,728 persons, reporting net sales for 1939 of \$824,956,000 and annual pay roll of \$42,663,000. There were 47,604 retail stores with 107,409 employees, reporting sales of \$1,064,092,000 and pay roll of \$105,249,000. Service establishments numbered 13,458, employing 18,018 persons for \$16,801,000 per year, and reporting a business volume amounting to \$62,421,000. The leading business center of the State is Milwaukee which re-

ported wholesale sales of \$412,366,000, retail sales of \$288,244,000, and \$24,297,000 receipts for its service establishments. Madison reported sales of \$33,580,000 wholesale and \$44,329,000 retail.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Wisconsin was \$71,563,000. Under the Social Security program, financed by Federal funds matching State grants, 54,018 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$22.73 (U.S. average pension, \$21.08); 28,383 dependent children in 12,484 families received average monthly payments of \$36.64 per family (U.S. average, \$32.73); and 1,983 blind persons received \$23.63 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 24,106 and received \$19.60 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 3,987 (\$264,000); NYA student work program, 10,847 (\$76,000); NYA out-of-school work program, 5,694 (\$138,000); WPA, 30,297 (\$1,929,000); other Federal emergency projects, 21 (\$1,000); regular Federal construction projects, 3,744 (\$369,000). The Farm Security Administration certified subsistence payments totaling \$32,000 for the month to 769 cases.

Legislation. The Legislature convenes in regular session on the second Wednesday of January in odd years. It is composed of 33 Senators (3 Democrats, 24 Republicans, and 6 Progressives in 1941) and 100 Representatives (15 Democrats, 60 Republicans, and 25 Progressives).

According to comment by J. C. Ralston in *The Milwaukee Journal*, June 8, 1941, the ghost of war "had other lobbyists backed off the board" in the 65th Legislature. Excerpts from his summary of 1941 enactments, leading off with defense, follow:

A "Wisconsin state guard" replaces the national guard, now in arms in federal camps. The governor may increase its personnel to whatever point he thinks necessary. It is a volunteer organization, enlisted for one year. Its duties are confined to the state except that the governor, on request, may order it to the defense of another state, and it may pursue enemies and saboteurs across the border. Each state guard battalion is to have an aviation squadron. "The sabotage prevention act" penalizes plots and conspiracies. To convict under this act the state must prove intent. The maximum penalty for purposely damaging property used in war preparation is a \$10,000 fine, 10 years' imprisonment or both; the minimum is one year. The same penalties go for those in shops who intentionally turn out faulty defense jobs. Unsuccessful attempts to sabotage draw half the penalty. Conspirators get a like punishment. War industries may post "keep out" signs at the factory. To ignore the signs draws a \$50 fine or 80 days or both (A number of other measures protected the rights of men in the armed services.)

For the 1941-43 budget, the legislature voted \$78,868,278, compared to \$71,211,976 for the biennium which closes June 30. The biggest boost is in old age pension aid—\$2,041,055 greater in the next two years. The budget total is bigger but income tax revenues are, too. Taking both into account, the deficit for next biennium is not expected to exceed \$2,000,000. In the two years now ending it was \$4,000,000. These deficits represent the sums met from highway funds. Current revenues, plus \$20,500,000 from reenacted privilege dividend, cigaret, gift, transfer taxes, and the 60 per cent income surtax will fill the state's till. The legislature hedged against the chance that Uncle Sam might boost federal income taxes and tap the state's source of revenue. It enacted a clause to maintain state income tax revenues at present levels, no matter what comes.

State government got a gentle shake-up. Repeal of the painters' license law wiped out a bureau. The land economic surveys was transferred from the state planning board to the department of agriculture.

Dairy farmers who sell in the fluid milk market will face new conditions next year—outcome of the failure to reenact the milk control law. The present statute, first

enacted to meet the farm crisis of 1933 and renewed by each succeeding legislature, expires December 31. No one knows just what will happen. Some dealers think milk stands and other unregulated vendors will flourish and that this will result in price wars.

Repeal of teachers' tenure deprived 7,000 teachers, outside of the city of Milwaukee, of the permanency it was intended they should get when the law was passed four years ago. Counties have conducted a modest raid on school cash. Formerly they got 10 per cent of state fines and penalties, while the school fund got 90 per cent. Under a new law, counties will get 25 per cent. The state superintendent is empowered to appoint a supervisor of musical education to head a music study program in rural schools. The history and meaning of the American flag, the Declaration of Independence and the Constitution of the United States will be taught.

Business gets new laws. Bigger building and loan associations will be the rule. Capital stock, formerly restricted to \$5,000,000, is now unlimited. With banking commission approval, one association may purchase the assets of any other association. The purchasing association may pay for assets of the organization it buys in stock. Without banking commission approval, associations may borrow on assets not to exceed 20 per cent of share liability; with approval they may borrow on 50 per cent. The new securities act permits the sale of "seasoned securities" on notice. Public utilities may merge under a written plan approved by a two-thirds vote of each class of stock.

Cities and villages have a new planning and zoning law. Under its provisions the planning commission is required to adopt a master plan to include related areas outside the municipality.

Drivers who now hold licenses must renew them between Sept. 1 and Nov. 1, 1941. No examination is required—the fee is 25¢. New drivers must prove good eyesight, ability to understand traffic signals and knowledge of traffic laws. They must demonstrate ability to operate the vehicle. The fee is \$1. The department may require any operator to undergo a special physical examination—physician's fee, \$2. All licenses must be renewed every four years. Special licenses may be issued to farm boys 14 to 16 years old, but not in Milwaukee county. Young persons from 16 to 18 may also have licenses. Parents or guardians are responsible for drivers in these junior groups. "Negligent homicide" is a new crime created by statutes to cope with drunken and reckless drivers. (The laws pertaining to revocation of licenses and other penalties were also broadened.)

Bosses and employes are happy about the revised unemployment compensation act. Its new standards are designed to preserve the "additional credit" the federal government allows Wisconsin employes under the experience rating system. This system grants lower rates to bosses who keep their men on the job. A new schedule of benefits will take effect in 1942. The rates range from \$2 for a weekly wage of \$3 to \$17 for a weekly wage of \$33 or more. The existing rate is one-half the weekly wage, with a \$15 a week maximum. The number of weeks the employe may draw benefits, based on credit weeks, is increased from one-third to one-half.

Besides their diplomas, physicians and surgeons must have had the equivalent of the premedical course in the University of Wisconsin. After June, 1948, osteopaths licensed in Wisconsin must have completed two years' college work in subjects akin to medicine. Registered nurses must be citizens or have declared their intention, and they must be 21 years old—the age was 20 in the old law. They must be high school graduates—formerly one high school year sufficed. And they must have a diploma from a school of nursing with a three year course instead of two. Dental hygienists must complete high school and have two years in college.

The Thomson act directs the board to hold an examination for director of personnel and certify the three top names to the governor. It also empowers the governor to remove the director "for just cause with approval of the board." The personnel board must not be tainted. Its members must not have run for office or served on political committees for three years prior to appointment. Job hunters who flunk the written civil service test cannot take the oral examination.

By diligence, Brown county's assemblymen pushed through a bill to reapportion their districts. These districts comply with a constitutional mandate to reapportion after each census. A new law bars from the ballot groups linked to alien governments, sabotage, lawlessness and force.

One constitutional amendment was submitted to the vote of the people in 1941 and was passed; it paved the way for installment paying of real estate taxes, thus spreading the property taxpayer's burden.

Finances. Total tax collections in Wisconsin for the fiscal year ending in June, 1941, were \$108,831,000 (1940: \$97,266,000). Total sales taxes

amounted to \$31,584,000, including motor fuel, \$21,849,000. Taxes on specific businesses ran to \$4,044,000, general and selective property, \$14,600,000, unemployment compensation, \$10,647,000. The net income taxes were \$22,814,000. Cost payments for the operation of general government totaled \$74,856,000 in 1939, the latest year available. (Revenues for the general government for that year were \$103,137,000.) Cost of operation per capita was \$24.07. Total gross debt outstanding for 1940 was \$4,104,000, as compared with \$1,184,000 in 1932.

Officers and Judiciary. The Governor is Julius P. Heil (Rep.), inaugurated in January, 1941, for his second two-year term; Lieutenant Governor, Walter S. Goodland; Secretary of State, Fred R. Zimmerman; Attorney General, John E. Martin; State Treasurer, John M. Smith; State Auditor, Fred R. Zimmerman. Chief Justice of the Wisconsin Supreme Court is Marvin B. Rosenberry; there are six associate members elected by popular vote for 10-year terms.

See CONSUMERS' COOPERATIVES; DAMS.

WOMEN IN INDUSTRY. See LABOR CONDITIONS; WOMEN'S BUREAU.

WOMEN'S BUREAU, The. A bureau in the U.S. Department of Labor authorized by law to "formulate standards and policies which shall promote the welfare of wage-earning women, improve their working conditions, increase their efficiency, and advance their opportunities for profitable employment."

The defense program was the primary concern of the Bureau during 1941. Investigations of aircraft plants, arsenals making small arms ammunition and artillery ammunition, and instrument-making plants were made by Bureau representatives and on the basis of their findings reports were issued as to the various processes suitable for the employment of women and the training that would be required. Housing and recreational needs of women in defense industries in certain areas where industrial activity is most heavily concentrated or newly developed were studied, and a handbook on standards and policies in relation to such needs is to be published. Two Special Defense Bulletins, *Lifting Heavy Weights in Defense Industries*, and *Safety Clothing for Women in Industry*, were added to the Bureau's series of publications on the intelligent use of women workers in the defense program. Analyses of recent British experience regarding use of women in war industries and significant developments from World War I also were made public. The outbreak of hostilities in the last month of 1941 brought additional responsibilities to the Bureau, which pledged all its resources and its first-hand knowledge of World War I (the Bureau was set up during the first World War to promote the most effective use of women in war industries, and safeguard their interests at the same time), to the task of mobilizing the woman power that will be needed in the present emergency. The Bureau has served as a clearing-house on all questions pertaining to women workers and defense.

Closely tied in with defense activities is the Bureau's Pan-American program. For six months a staff member of the Bureau studied social and economic conditions in Uruguay, Chile, and Argentina. Through this and other efforts the Bureau has initiated a regular exchange of technical information, experience, and ideas regarding the problems of women workers between the two continents.

While the defense program has been of para-

mount importance it has not obscured the significance of other activities of the Bureau; 1941 has seen the Bureau, through its investigations, make available additional data on the health and welfare, the wages, hours, and working conditions, the economic status and responsibilities of wage-earning women. Throughout the year assistance has been given to State and Federal authorities, trade unions, and various organizations and groups interested in raising the status of working women. In answer to thousands of requests, written materials of all sorts, and various exhibits such as charts, maps, films, etc., illustrating and explaining the problems of women in industry, have been sent to schools, trade unions and other organizations, and to inquiring individuals in the United States and abroad.

Of particular interest are the following bulletins published or prepared during 1941:

No. 156-I—State Labor Laws for Women, December 31, 1940—Summary; No. 157—The Legal Status of Women in the United States of America, January 1, 1938—United States Summary; No. 167—State Minimum Wage Laws and Orders, 1940—Second Supplement; No. 180—Employment in Service and Trade Industries in Maine; No. 181—The Nonworking Time of Industrial Women Workers (study by students of Hudson Shore Labor School, July, 1940); No. 182—Employment of Women in the Federal Government, 1925 to 1939 (in press); No. 183—Women Workers in Their Family Environment; No. 184—The Occurrence and Prevention of Occupational Diseases Among Women, 1935-1938; No. 185—The Migratory Labor Problem in Delaware; No. 186—Earnings and Hours in Pacific Coast Fish Canneries; No. 187—Labor Standards and Competitive Market Conditions in the Canned Goods Industry; No. 188-1—Office Work in Houston, 1940, and No. 188-2—Office Work in Los Angeles, 1940 (in press); Special Bul. No. 2—Lifting Heavy Weights in Defense Industries; Special Bul. No. 3—Safety Clothing for Women in Industry. The bimonthly periodical *The Woman Worker* was issued regularly. It makes available to women workers a variety of information on labor laws, court decisions, trade-union agreements, special studies, and so forth.

MARY ANDERSON.

WOOD. See LUMBER.

WOOL. New highs were registered on all fronts in the domestic wool industry during 1941. With mills operating at near capacity rates throughout the year, consumption of apparel wool continued to mount, reaching the amazing level of nearly 11 million lb. of scoured wool weekly near the close of the year. On October 1, mills held unfilled orders for over 98 million linear yards of woolen cloth which, combined with army contracts for about 44 million yards awarded during the final quarter, insured that the rate of production would be maintained during the first half of 1942 even though new orders for civilian use may be relatively small. Dealers and manufacturers held relatively large stocks of wool at the close of the year. Domestic wool consumption for the year totaled 1,213,900,000 lb., grease basis, including 1,021,500,000 lb. of apparel wool and 192,400,000 of carpet wool. Respective totals for 1940 were 683,300,000 and 137,600,000 lb.

Approximately 48 million sheep were shorn in the United States during 1941, yielding an estimated total of 389,128,000 lb. of wool, 3 per cent larger than the previous high production of 1940 and 9 per cent above the 1930-39 average. Total domestic production was further increased by about 66 million lb. of pulled wool. Farmers received 36.7 cents per lb. for grease wool in mid-December as compared with 31.2 cents a year earlier, and averages of 22.3, 28.4, and 35.5 cents for 1939, 1940, and 1941 respectively. The price on the Boston market for territory fine staple wool, scoured basis, which averaged 96.3 cents for 1940, fluctuated only slightly from \$1.08 per lb. during

the first nine months of the year but steadily increased during the last quarter to \$1.14 in December. Other grades followed similar price trends.

United States imports during the first nine months of 1941 included 491,400,000 lb. of apparel wool (132,900,000 lb. for the first nine months of 1940) and 171,000,000 lb. of carpet wool (101,000,000 lb. for the first nine months of 1940). Before 1940, the major part of these imports of apparel wool came from Australia, New Zealand, and South Africa, but during 1940 and 1941 approximately 60 per cent came from South American countries. This percentage does not include Australian wool imported under supervision of the Defense Supplies Corporation and stored in this country as a strategic reserve, which, under the terms of the 1940 British-United States agreement, is to be gradually increased to 250 million lb.

Argentina has also become the primary source of carpet wool imports into this country, since shipping difficulties and the large military requirements of the United Kingdom have largely eliminated British India and China as sources of this commodity. The Argentina-United States Trade Agreement of 1941 reduced the import duty on coarse wool by 11 cents per lb. which should be a further stimulus to Argentine export to this country.

Reliable data on European and Asiatic wool production for 1941 are not available, but the Southern Hemisphere, including all important wool exporting countries, produced 2,338 million lb. during the 1940-41 season and the 1941-42 production is now estimated at 2,350 million lb., a slight increase, but somewhat below the record production of 1939-40. About 70 per cent of the foreign production, including the entire output of Australia, New Zealand, and South Africa, is under the British Wool Control which resells any exportable surplus to approved buyers at a fixed price. It is expected that large quantities of fine grade apparel wool, now in greatest demand in this country, will be available to United States buyers in Australia and South Africa during the 1941-42 season.

See CHEMISTRY, INDUSTRIAL under *Textiles*; CUSTOMS, BUREAU OF; LIVING COSTS AND STANDARDS; TEXTILES.

E. C. ELTING.

WORKMEN'S COMPENSATION. See LABOR LEGISLATION; INSURANCE.

WORK PROJECTS ADMINISTRATION (WPA). The WPA is that part of the Federal Works Agency which since 1935 has operated a program of useful public projects to provide jobs for needy unemployed workers. The great majority of all WPA projects are proposed and sponsored by State and local agencies that cooperate with the WPA in project supervision and pay a considerable share of the total project cost. Relatively small numbers of WPA projects are sponsored, and a few are operated, by Federal agencies other than the WPA.

WPA activities, like those of many other Federal agencies, have been coordinated with the national defense effort. To a large extent WPA participation in the defense program has been effected by an intensification and broadening of certain types of work that had previously been included among the regular program activities. For example, extensive additions and improvements to the national airport network had been made through WPA projects before 1940. Facilities at military and naval reservations had been improved through projects for the construction of roads, buildings, and sewer and

water systems. These kinds of work and the construction or improvement of access roads to military and naval establishments and to defense industrial centers have made up the greater part of the WPA defense activities.

By special provisions in the acts appropriating funds for the fiscal years 1941 and 1942, projects certified by the Secretary of War or the Secretary of the Navy as important for military or naval purposes may be exempted from the requirement that sponsors must contribute one-fourth of the cost of projects approved in each State; from the limitations on hours of work and earnings of project workers; and from the limitations on the use of Federal funds for non-labor costs and for the construction of large buildings. In addition, Congress specifically authorized the WPA to undertake projects to train workers in manual occupations required by defense industries. Projects that the War and Navy Departments have certified as important for military or naval purposes have been given preference in operation to speed their completion.

The WPA has given employment to more than 8,000,000 different persons at one time or another since its establishment in 1935. The work done by these people has covered a variety of construction and nonconstruction activities that have contributed both to the national defense and to the physical facilities and public services of communities throughout the Nation. More than 600,000 miles of road construction and improvement were completed by WPA workers during the six years ending with June, 1941; about 73,000 new bridges and viaducts were built and some 44,000 others were reconditioned; 220 new airports were constructed and nearly twice that number were enlarged or improved. WPA workers also constructed nearly 500 miles of new airport runways; built large numbers of hangars, maintenance shops, and other airport buildings; and completed many other airport and airway improvements. The 110,000 public buildings constructed or improved during the six-year period include not only school buildings, hospitals, libraries, gymnasiums, and other structures for community use, but also armories, mess halls, storehouses, and other buildings at military and naval establishments. Some of the 14,000 miles of new water lines and 22,000 miles of new storm and sanitary sewers installed by WPA workers also were for military and naval centers. Other WPA accomplishments in the construction field include parks, playgrounds, swimming pools, and other recreational facilities; conservation requirements, such as storage dams and reservoirs; and many other needed public facilities.

WPA activities outside the construction field have provided a wide variety of community services that are important to the public welfare, such as literacy, naturalization, and other adult education classes; nursery schools for preschool children from low-income families; school lunches; the making of garments and other articles in sewing rooms for distribution to needy families and public institutions; direct medical and health services for persons who could not otherwise afford them; and clerical, research, and professional assistance to many local and Federal governmental agencies. Another major activity has been the national defense vocational training project through which substantial numbers of workers have received training in occupations required in defense industries.

During 1941 the WPA program was operated on a smaller scale than ever before. From the winter peak of 1,890,000 workers in January, average

monthly employment dropped steadily to less than 1,411,000 in June, reflecting seasonal decreases in need and the improvement in general business conditions that resulted from the defense program. At the beginning of the 1942 fiscal year the decline was greatly accelerated by the drastic curtailment in the amount of funds appropriated to the WPA, and employment was reduced to barely 1,055,000 in July. During the remaining months of 1941 the number of WPA workers fluctuated between 1,037,000 and 1,057,000 (November, 1941). During November about a third of the WPA workers were employed on defense projects.

A high rate of turnover among the workers employed has always been characteristic of the WPA program. During 1941, the number of separations was unusually large, reaching a peak of nearly 384,000 in June. A large share of the separations represent workers voluntarily leaving WPA jobs to obtain private employment. The rate of all separations varied from 11 to 27 per cent of employment at the beginning of the respective months as compared with accession rates that ranged from 9 to 15 per cent during the same period.

For the operation of the program during the calendar year 1941 a total of \$1,135,217,000 in WPA funds was spent, of which 96.4 per cent was for project costs (including those of a small number of projects operated by other Federal agencies) and 3.6 per cent for administrative and miscellaneous purposes. About 37 per cent of the WPA project expenditures were made for defense work. A large share (87 per cent) of the total project expenditures from WPA funds were paid out in wages to workers. The expenditures of WPA funds for projects operated by the WPA were supplemented by \$476,582,000 in funds provided by project sponsors. These sponsors' funds, most of which were used for materials, equipment, and other non-labor costs of project operations, represented 31 per cent of the total outlay for projects operated by the WPA.

For further details, see the annual *Report on Progress of the WPA Program* (Work Projects Administration, Washington, D.C.)

See ART; MUSIC under *Orchestra*; RELIEF.

HOWARD O. HUNTER.

WORLD COURT. The Permanent Court of International Justice, whose seat at The Hague had been occupied and whose judges and officials had been deprived of their diplomatic status by the Nazis held no session during 1941. Its President and Registrar had moved their offices to Switzerland, while the judge of American nationality, Hon. Manley O. Hudson, represented the Court at the meeting of the Supervisory Commission in Montreal. See LEAGUE OF NATIONS.

WORLD SERIES. See BASEBALL.

WORLD WAR. For military campaigns of the first two years of war see YEAR BOOKS for 1939 and 1940 under EUROPEAN WAR. The following chronology, quoted (with bibliographical references omitted) from the *Department of State Bulletin*, Dec. 27, 1941, pp. 590-5, will serve as a résumé of developments in the war up to the beginning of 1941. (For 1941 chronology see under CHRONOLOGY in this volume.)

1938

March 11—German troops crossed Austrian frontier.
March 13—Austro-German Union proclaimed at Vienna: "Austria is a state (land) of the German Reich."

April 16—British-Italian agreement signed, whereby Great Britain recognized the conquest of Ethiopia and Italy promised to withdraw all troops from Spain at the conclusion of the civil war.

April 27-29—Three-day Anglo-French conference at London. Arrangement concluded whereby the British and French general staffs would collaborate more closely henceforth in military and naval defense.

July 21—Chaco Peace Pact signed, ending the long conflict between Bolivia and Paraguay.

September 15—Chamberlain-Hitler talk at Berchtesgaden.

September 22-23—Chamberlain-Hitler talks at Godesberg.

September 26—President Roosevelt appealed for peace directly to Hitler and President Benes.

September 28—Chamberlain, Daladier, Hitler, and Mussolini signed Munich Pact.

September 30—Chamberlain-Hitler peace declaration signed.

October 1-10—Sudeten areas occupied by Germany.

October 1—Czechoslovakia yielded to Poland.

October 2—Polish troops occupied the Teichen area.

December 6—Franco-German peace declaration signed.

1939

March 14—German, Hungarian, and Rumanian troops invaded Czechoslovakia Slovakia proclaimed independence.

March 16—German Government officially proclaimed Bohemia and Moravia protectorates. Decree of March 16 of the Government of the Reich on the Protectorate of Bohemia and Moravia.

Slovakia taken over as a protectorate by Germany.

Hungary announced annexation of Carpatho-Ukraine.

March 22—Memel ceded to Germany by Lithuania: Reunion completed with the signature at Berlin of a five-point nonaggression pact.

March 31—Prime Minister Chamberlain in the House of Commons announced a British and French pledge to come to the assistance of Poland with all the power at their command "in the event of any action which clearly threatened Polish independence and which the Polish Government accordingly considered it vital to resist with their national forces."

April 1—Spanish civil war ended: "After having made prisoner and disarmed the Red Army, the National troops have attained their final military objective in consequence, the civil war is over" (Gen. Francisco Franco).

April 6—Prime Minister Chamberlain announced in the House of Commons a Polish-British agreement, bringing into existence a triple alliance—France, Great Britain, and Poland. The agreement was a provisional mutual-aid pact, pending the elaboration of a formal treaty of alliance.

April 7—Italian troops invaded Albania.

April 13—Prime Minister Chamberlain made statement in House of Commons which guaranteed borders of Rumania and Greece: "... in the event of any action being taken which clearly threatened the independence of Greece or Rumania... His Majesty's Government would feel themselves bound at once to lend... all the support in their power." Similar assurances were given by France.

April 14—Communication of President Roosevelt to Chancellor Hitler and Premier Mussolini: Plea for 10-year guaranty of peace.

April 25—German note notified Great Britain of denunciation of the Naval Agreement of June 18, 1935.

German note to Poland denounced the 10-year nonaggression treaty of January 26, 1934 between the two countries and requested the return of Danzig as well as an extraterritorial railway and highway connection to East Prussia.

July 26—United States gave notice of intention to abrogate its commercial treaty of 1911 with Japan in note from the Secretary of State to the Japanese Ambassador.

August 23—German-U.S.S.R. nonaggression pact signed.

August 24—President Roosevelt sent appeals for peace to Chancellor Hitler, Premier Moscicki, and King Victor Emmanuel.

August 25—Great Britain and Poland signed formal treaty of mutual assistance.

September 1—German troops invaded Poland; Danzig joined Germany.

September 3—Great Britain declared a state of war existed with Germany.

France declared a state of war existed with Germany.

September 16—Soviet troops invaded Poland.

September 28—German-U.S.S.R. border and friendship treaty signed, resulting in partitioning of Poland.

Estonian-U.S.S.R. 10-year mutual-assistance pact signed at Moscow: Gave U.S.S.R. bases for aviation and artillery.

October 3—Declaration of Panamá signed.
October 5—Latvian-U.S.S.R. 10-year mutual-assistance pact signed at Moscow.

October 10—Lithuanian-U.S.S.R. 15-year mutual assistance treaty signed at Moscow.
 October 19—Anglo-French-Turkish 15-year mutual-assistance pact signed at Ankara.
 November 1—Polish Corridor, Posen, and Upper Silesia annexed by Germany.
 November 3—U.S.S.R. incorporated Polish Western Ukraine and Western White Russia.
 November 4—United States Neutrality Act of 1939 approved.
 November 21—German-Slovak treaty signed at Berlin, ceding to Slovakia 225 square miles of territory annexed by Poland in 1920, 1924, and 1938.
 November 30—Soviet troops invaded Finland.

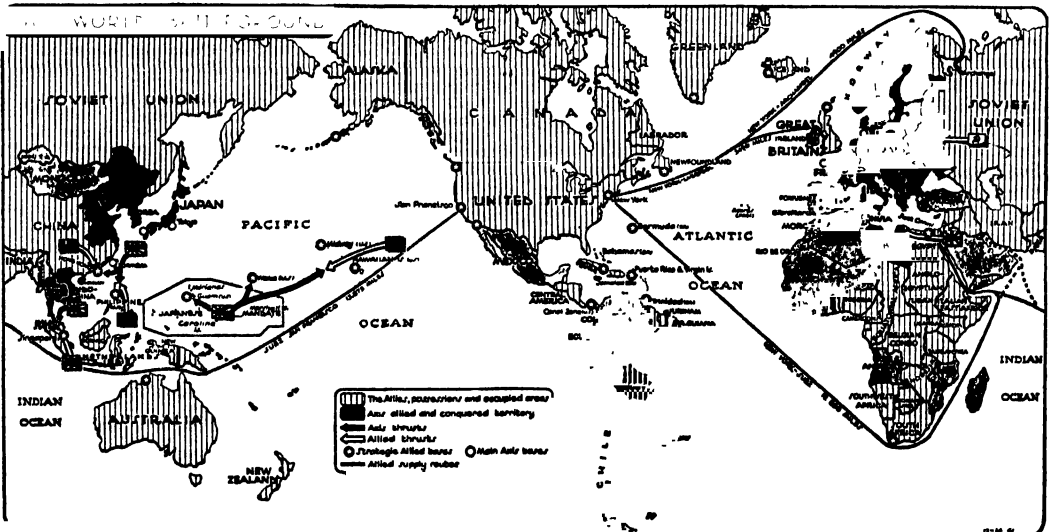
1940

March 12—Soviet-Finnish peace treaty and protocol signed at Moscow.
 April 3—Great Britain and France announced that three areas of Norwegian waters had been mined in the attempt to prevent shipment of Scandinavian ore to Germany.
 April 9—German troops invaded Denmark. Germany attacked Norway.
 April 17—Secretary of State Hull issued a formal statement declaring any change in *status quo* "would be prejudicial to the cause of stability, peace, and security" in the entire Pacific Area.
 May 9-10—Germany invaded Belgium, Luxembourg, and the Netherlands.
 May 10—Winston Churchill became Prime Minister of Great Britain following resignation of Neville Chamberlain.
 British occupation of Iceland announced in London.
 May 15—The Netherlands Army surrendered.
 May 19—Chancellor Hitler issued a proclamation decreeing the reincorporation into the Reich of Eupen, Malmédy, and Moresnet.
 May 28—Belgian Army under King Leopold surrendered.
 June 9—Norwegian high command ordered army to cease hostilities at midnight.
 June 10—Italy declared war on Great Britain and France.
 June 14—German troops entered Paris.
 June 15—Soviet troops marched into Lithuania.
 June 17—U.S.S.R. announced Estonia and Latvia had agreed to free passage of Soviet troops and to formation of new governments.
 June 22—Franco-German armistice signed.
 June 24—Franco-Italian armistice signed.
 June 27—Rumania agreed to cede Bessarabia to U.S.S.R.
 June 28—British Government recognized Gen. Charles de Gaulle as leader of group to maintain French resistance.
 July 3—British sank or seized major part of French fleet.
 July 5—French Government of Marshal Pétain broke off diplomatic relations with Great Britain as result of British attack on French warships at Oran.

July 18—British Prime Minister announced terms of a temporary agreement for stoppage of war supplies to China through Burma and Hong Kong.
 August 26—Estonia, Latvia, and Lithuania ratified U.S.S.R. incorporation.
 September 2—United States-British notes on lease of British bases in return for 50 United States destroyers.
 September 7—Bulgarian-Rumanian agreement ceding the Dobruja to Bulgaria signed at Orlova, Bulgaria.
 September 23—Japanese-French agreement regarding concessions in Indo-China to Japan.
 September 27—German-Italian-Japanese 10-year military-economic alliance pact signed at Berlin.
 October 28—Italy attacked Greece prior to expiration of ultimatum, creating state of war.
 November 4—Spanish incorporation of international zone of Tangier.
 November 20—Hungary signed protocol of adherence to Axis tripartite pact at Vienna.
 November 23—Rumania signed protocol of adherence to Axis tripartite pact at Vienna.
 November 24—Slovakia signed protocol of adherence to Axis tripartite pact at Berlin.
 November 26—Governor-General of Belgian Congo declared state of war with Italy.
 November 30—Japanese peace treaty signed with the Wang Ching-wei regime at Nanking, China.
 December 6—Japanese-Thai pact of amity signed.
 December 12—Hungarian-Yugoslav treaty of friendship signed.

THE WAR IN 1941

At the close of 1940 the war had spread far beyond the confines of Europe and had assumed a revolutionary character both in its military and political aspects. Modern weapons and techniques had accelerated the tempo of military events beyond the imagination of prewar military critics. Poland had been conquered in about three weeks. Denmark was occupied in a single day. Norway succumbed in less than a month. Holland, Belgium, and France were over-run and conquered in a campaign of 40-odd days. A completely revolutionary alteration in fundamental European national-political concepts seemed inescapably connected with these rapid German successes.
 Not only had the pace of military operations increased, but the character of the war underwent fundamental changes with the collapse of France and the entrance of Italy into the war. From the end of June, 1940, Britain faced the overwhelming continental military power of the Axis and enjoyed superiority in only one weapon—sea power. Eco-



Courtesy of The New York Times

THE LINE-UP OF ALLIED AND AXIS POWERS, DEC. 31, 1941

Bolivia, which was reported to have declared war on Japan, actually remained non-belligerent

conomic exploitation of the conquered areas by special German economic troops (Wehrwirtschaftstruppe) added to the effectiveness of German war industry and offset the effects of the British blockade. With the failure of the Luftwaffe to soften the British Isles for an invasion, the war gradually extended to other theaters and took on the essential characteristics of a struggle between land and sea power.

Only in three instances in 1940 did the triumphant Axis meet with reverses. The German Luftwaffe failed in its mass raids on Britain in September and October; the Italian invaders of Greece were thrown back into a humiliating defense of Albania; the British Imperial Army of the Nile assumed the offensive at Sidi Barrani (December 7-10) and captured or destroyed almost the entire Italian garrison. Sweeping past Solum and Fort Capuzzo, the striking force of Gen. Sir Archibald P. Wavell was at the gates of Bardia on Dec. 31, 1940.

British Offensive in Libya. This offensive (Jan. 1-Feb. 9, 1941) was made possible by the courage and vision of Winston Churchill, who sent sufficient first-line fighter planes, bombers, and tanks from Britain to the Middle East (in the face of a threatened German invasion) to give General Wavell superiority over the Italian Libyan army in these weapons. It is probable that Churchill determined soon after the collapse of France to extend the war to distant fronts, on the sound assumption that this was the only kind of war which afforded the British Empire a reasonable chance of ultimate victory.

The British striking force which surprised the Italians at Sidi Barrani and which went on to destroy the greater part of Marshal Graziani's army never exceeded 40,000 men. The campaign which followed illustrated once again the helplessness of mere numbers in the face of superior military equipment and planning. The Italian Libyan army (according to the statement of Mussolini) numbered more than 290,000 men and possessed 1,900 cannons, 770 tanks, 15,000 machine guns, and 10,000 trucks. The British hope for success depended upon the effective command of the air attained by Air Marshal Sir Arthur Longmore's squadrons, on the support of the Royal Navy, on the superior but limited mechanized equipment of Gen. Michael O'Moore Creagh, on the offensive skill of the Australian combat divisions, on the superior morale of the British troops, and on the efficiency of British staff work.

Before the Sidi Barrani battle few military critics believed that surprise was possible in a desert theater of war. The harsh and inhospitable area of operations was regarded by both sides as a hindrance to movement. General Wavell was among the first British officers to see that the desert could be used like the sea to transport men and equipment to the decisive point if mechanical equipment was available and if command of the air was maintained. Marshal Graziani played into the British hands by acting upon the World War concept of "fighting for places." As a result his army was destroyed piecemeal.

The unexpected success of December 7-10 and the relatively low state of Italian morale prompted General Wavell to advance into Libya. His forces encircled Bardia on January 1 and captured it on January 6. Advancing immediately on Tobruk, where heavier resistance was encountered, Australian shock troops broke through the defenses of this important base and captured it on January 22. Large numbers of prisoners, including several field officers, were captured. The ancient cruiser *San*

Georgio (10,000 tons) was destroyed in the harbor. Derna was surrounded on January 24 and fell on January 30. Benghazi was captured on February 7 and the Italian outpost at El Aghaila was occupied on February 9. These victories yielded a total of 150,000 Italian prisoners and an immense bag of military booty. As was true of the losses suffered by the German armies in their victorious campaigns, the British casualties were remarkably low. On March 5 the British War Office announced the total casualties in the Libyan campaign as 1,744 killed and wounded.

General Wavell's victories were the first British successes on land during the war. They cheered and inspired the whole British Empire and the neutral world at a time when British morale needed a lift. Combined with the Greek victories in Albania, they brought Italian military prestige and morale to a new low and made German intervention for her relief imperative.

With the capture of El Aghaila on February 9 the British offensive in Libya slowed down. Despite press clamor for an invasion of Tripoli, General Wavell did not have the forces or equipment necessary. Free French forces captured an Italian oasis post at Kufra (Kupra) on March 3, and the British occupied the oasis of Jarabub on March 25, but the military balance in Libya had already been altered against the British. Marshal Graziani was replaced on March 25 by Gen. Italo Gariboldi, who, in turn, became a virtual subordinate of Gen. Erwin Rommel, commander of the German forces sent to North Africa. The mechanized division of General Creagh needed an overhaul after fighting over 500 miles of rough terrain. Enemy action had already altered the situation of General Wavell's army.

Before the British offensive in Libya had reached its crest, German forces in Italy made their weight felt. Stuka squadrons based on Catania in Sicily made a desperate and sustained attack on a British convoy in the Straits of Pantelleria during the week of January 10. The British convoy destined for the eastern Mediterranean was protected by the aircraft carrier *Illustrious*, by cruisers, and destroyers. Dive bombers and torpedo planes carried out the attack with reckless disregard for losses. Possibly the British were surprised by the determination of the Nazi pilots who closed in on the convoy making direct hits on the carrier and other vessels. Concentrating their attack on the cruiser *Southampton* (9,000 tons) and the destroyer *Gallant* (1,375 tons), they inflicted so much damage that both these vessels were sunk. The main flight deck of the *Illustrious* was severely damaged; her sides and upperworks were riddled with bomb splinters; but her anti-aircraft guns remained in action and she succeeded in making the port of Valletta in Malta. Repeated bombing attacks designed to finish her off in the harbor were ineffective. She proceeded to Alexandria under her own steam and finally arrived in the United States for repairs. Though 12 Stuka planes were shot down in the engagement and others were destroyed over Malta and bombed at their base, the action in the Straits of Pantelleria was highly important. The *Southampton* was the first British cruiser to be sunk outright by bombing. After this experience the British surface forces ceased to operate freely in these waters, and the Axis was able to transport troops and equipment to reinforce the army in Libya.

A German mechanized division (commanded by General Rommel) as well as German fighter planes and bombers appeared on this front. By the middle of February General Rommel possessed superiority in both air power and mechanized equipment on

the front near El Agheila. General Rommel was a tank expert who had served in the Polish, Flanders, and French campaigns. He had the reputation of being a tough and resourceful soldier. The direction of the Axis war in North Africa soon passed into his hands. His forces captured El Agheila on March 25. The British and neutral press treated this step as a minor episode of desert warfare, but when General Rommel's force recaptured Bengazi on April 4, no further illusions were possible.

Events in Greece had also altered the plans of the British Middle East Command. Because of demands for troops in the Balkans, it was necessary to abandon the territorial gains of the Libyan campaign. The decision to retire to the Egyptian bases probably saved General Wavell's advanced forces from capture. General Rommel's bold and well-organized sweeps only succeeded in capturing a small number of troops. On the night of April 8, however, a German motorcycle unit cut off a convoy and captured three senior British generals (Neame, Gambier-Parry, and O'Connor). A strong British garrison was left in Tobruk under Gen. Leslie Morshead, since it could be supplied from the sea. The mass of the army was withdrawn to its old position at Sidi Barrani and Mersa Matruh. After the middle of April the front in this area remained static until the British offensive of November 18.

The Conquest of Italian East Africa, which was being prepared while the Libyan campaign was underway, cannot be considered apart from it and other events in the eastern Mediterranean. Indecisive fighting had broken out on the frontiers of Kenya

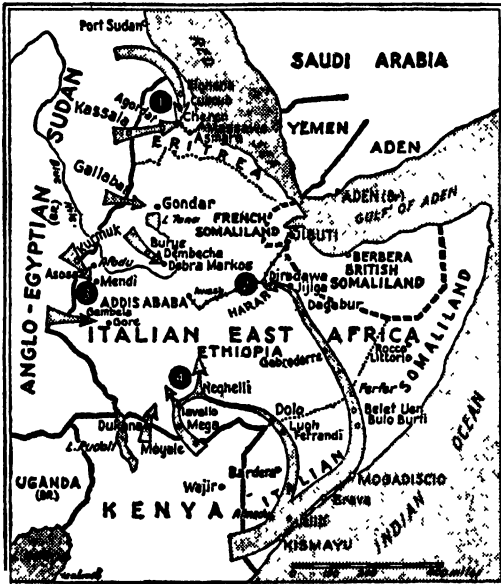
munitions to the Middle East. Though the Duke of Aosta was isolated from Italy and faced certain destruction with the gradual exhaustion of his supplies, his armies constituted a threat to the Sudan as long as they were intact. The British had suffered the loss of British Somaliland in July, 1940. Like other projected Allied operations in the Middle East, British plans for action against the Duke of Aosta were adversely affected by the collapse of France and the uncertainty over the status of French Somaliland and its garrison.

An imperial army of South African, Indian, and British troops numbering about 60,000 men was concentrated for the conquest of Italian East Africa. The attack developed from four main directions in February, 1941. One British column advanced from Moyale in Kenya toward Mega (captured February 20) and Neghelli (captured March 23) in Ethiopia. A second British column from Kenya under the command of Gen. Sir Alan Cunningham crossed into Italian Somaliland, bridged the Juba river, and advanced on Mogadiscio. The main Italian military strength in this colony was broken in operations before Mogadiscio in which over 10,000 prisoners were captured. The capital of Italian Somaliland fell on February 26, and General Cunningham's column was able to advance northward into Ethiopia. Gabredarre was captured on March 9 and Jigjiga on March 19. The Addis Ababa-Djibouti railway was cut on March 30 with the British capture of Direddawa. A third British column advanced from the Sudan in the direction of Burye (captured March 6) and Addis Ababa which was evacuated by the Italian forces on April 6.

A fourth British column operating from Kassala commanded by Lieut. Gen. William Platt invaded Eritrea and captured Agordat on February 2. Advancing northeastward toward the Red Sea this column encountered the main Italian resistance at Cheren on February 12. Well-entrenched in a mountain fastness the Fascist troops put up a stubborn and gallant defense. Demonstrating a morale distinctly superior to that encountered in the army of Marshal Graziani, the Italian forces at Cheren held out until March 28. The fall of Cheren enabled the British column in Eritrea to divide. One part moved northward to occupy Massaua (captured April 8) and Assab (captured June 12). The other half of the British column in Eritrea turned southward to effect a junction with General Cunningham's forces in Ethiopia. The main forces of the Duke of Aosta were driven to cover at Ambi Alagi and forced to surrender on May 19. This capitulation practically completed the military conquest of Italian East Africa.

The exiled Emperor Haile Selassie set up his temporary field headquarters at Burye on March 26 and entered his former capital on May 6. Scattered Italian and native bands continued resistance in the Gondar area until November 29, but these uncoordinated efforts were meaningless. With the virtually complete occupation of Eritrea, Italian Somaliland, and Ethiopia, the Italian East African colonial empire built up through years of work and sacrifice had been conquered in approximately seven months. Combined with the defeats in Libya the loss of her East African Empire revealed the weakness of Italian military strength. She became more and more the virtual prisoner of Nazi Germany.

Background of the Balkan Campaign. Italian defeats in Albania and Africa having made German military assistance necessary, German air squadrons and technical troops moved into Italy during the winter of 1940-41. German dive bomber squadrons



Courtesy of The New York Times

CAMPAIGN IN EAST AFRICA

Multiple Allied drives opened the way for the conquest of Ethiopia by the capture of Cheren (1), Harar (2), Gambela (3), and Neghelli (4) in March, 1941

and Egypt in June, 1940, but the program for destroying the Duke of Aosta's forces (some 250,000 white and native troops) did not materialize until February, 1941. The British occupation of the Red Sea littoral, the Gulf of Aden, and the ports of Italian Somaliland might encourage the United States to remove this area from the combat zone and facilitate the shipment of American arms and

based on Sicily covered the reenforcement of the Axis Libyan army and made their strength apparent in the action in the Straits of Pantelleria in January. In an attempt to undermine Italian home morale, British air raids on Italian cities were conducted throughout the winter and the Gibraltar fleet made a surprise bombardment of Genoa on February 9, killing 72 and wounding 226 Italians. British parachute troops were employed for the first time in the war to destroy Italian communications in the Calabria-Lucania area on February 13-14. Throughout January and February Greek troops in Albania repulsed Italian counter attacks in the Klisura, Tepelini, and Elbasan sectors and retained the initiative which they had gained in the earlier stages of the conflict. Repeated failures and heavy losses on the Albanian front caused the replacement of Gen. Ubaldo Soddu by Gen. Count Ugo Cavallero on January 13. These events foreshadowed early active German military assistance in the Balkans.

Axis diplomatic preparations for a spring campaign in the Balkans were made in the winter of 1940-41. Rumania and Hungary became German vassals through gradual infiltration of Nazi military units. Axis military problems in the Balkans were considerably simplified on February 17 when Turkey and Bulgaria signed a nonaggression pact which protected the Axis flank on the Bulgar-Turkish frontier. Bulgaria joined the Axis on March 1, and subsequent troop movements into that country enabled the Germans to put heavy pressure on Yugoslavia to join the "new European order."

British counter steps were limited to breaking off diplomatic relations with Rumania and threatening to bomb Bulgarian bases. In February and March British Foreign Secretary Anthony Eden and Chief of the Imperial General Staff, Gen. Sir John Dill, visited Cairo, Ankara, and Athens, in an attempt to nullify Axis pressure. They were unable to secure consent of the Yugoslav Government to participate in joint military conversations. The German Government maintained outwardly friendly relations with the Greek Government and was able to check up on reported British troop movements to Greece. Both sides exerted the strongest possible pressure on Yugoslavia to assure her cooperation in event of hostilities. By the end of March, it was apparent that the spread of the war to the Balkans was merely a matter of time.

The Battle of Cape Matapan (March 28). Italian naval sweeps designed to cut off British transports moving to Greek ports led to a naval engagement between British and Italian naval forces off Cape Matapan on March 28. This was the first meeting of any considerable body of Italian and British warships since the destructive raid carried out by Admiral Cunningham's torpedo planes against the Italian naval base at Taranto on Nov. 11, 1940. British reconnaissance planes reported a movement of Italian war vessels southwest of Sicily at noon on March 27. At once British light forces commanded by Vice Adm. H. D. Fridham-Whippel consisting of the cruisers *Orton* (flagship), *Ajax*, *Perth*, and *Gloucester*, and destroyers left Alexandria for a rendezvous south of Crete. They were followed by units of the main fleet under command of Adm. Sir Andrew Cunningham consisting of the battleships *Warspite* (flagship), *Valiant*, and *Barham*, the aircraft carrier *Formidable*, and destroyers.

The Italian fleet consisting of 1 battleship of the *Littorio* class, 6 cruisers, and 7 destroyers was located at 7:49 a.m. on the following day by British scouting planes 35 miles south of Gavdo island steaming in a southeasterly direction. Contact was

established by the British light forces at 8:02 a.m., and an attempt was made to lure the Italian force toward the oncoming British main fleet (55 miles to the southeast). Torpedo planes from the carrier *Formidable* made an attack on the Italian battleship of the *Littorio* class during the morning. This attack caused the whole Italian fleet to turn about and the British light forces lost contact with the enemy. The two halves of the British fleet united during the morning and steamed in pursuit of the enemy. At 11:35 a.m. British naval patrol planes reported a second Italian fleet consisting of 2 battleships of the *Cavour* class, 3 cruisers, and 4 destroyers, 80 miles west of Gavdo island.

In the early afternoon three hits were scored on the Italian battleship of the *Littorio* class by torpedo planes and by 4 p.m. its speed had been reduced. Efforts made to protect the stricken vessel probably reduced the speed of the whole Italian fleet, for British light forces again made contact with the enemy after dusk. At 10:10 p.m. units of the main British fleet overtook what appeared to be a damaged enemy cruiser. Immediately two other enemy cruisers were picked up by the searchlight of the destroyer *Greyhound*. Riddled by the 15-inch guns of the *Barham* and *Valiant*, the enemy cruisers *Pola* (10,000 tons), *Zara*, and *Fiume* (sisterships to the *Pola*) were sunk. In the melee which followed, the large Italian destroyer *Vincenzo Gioberti* (1,729 tons) and the destroyer *Maestrale* (1,449 tons) were also sunk. Bombing attacks by German planes prevented the British from rescuing more than 55 officers and 850 men. One German Ju. 88 bomber was shot down. Total British losses were two naval aircraft. At the close of the action, Admiral Cunningham sent a radio message *en clair* to the Chief of the Italian naval staff giving the location of about 350 Italian survivors on rafts. This courtesy was immediately acknowledged by the Commander-in-chief of the Italian navy who radioed that the hospital ship *Gradisca* had left Taranto to pick them up.

Coming on the heels of preceding Italian naval losses, the battle of Cape Matapan seemed to re-enforce Britain's control of the surface of the eastern Mediterranean. No further efforts were made by enemy surface craft to interfere with British transports moving to Greece.

Outbreak of War in the Balkans (Apr. 6, 1941). German diplomatic pressure finally brought the pro-Axis Premier of Yugoslavia, Dragisa Cvetkovich, and Foreign Minister Aleksander Cincar-Markovich to a council table with Axis officials at Vienna on March 25. They signed an agreement making their nation a part of the "new European order." Though permission to transport troops through Yugoslavian territory was not specifically granted to Germany, it could be assumed that (as in the case with Bulgaria) these demands would soon be made. In order to exert the threat of military pressure on Greece, Germany needed access to the Vardar valley. The Greek-Bulgar frontier was well-defended by the modern Metaxas line constructed in 1934. With large concentrations of German troops in Bulgaria and with the prospect of facing a German attack by way of the Vardar valley, and the possibility of a junction of German and Italian troops in Albania, Greece would have no choice but to make peace on Axis terms. Hitler would then have reaped all the advantages of a military victory without fighting.

The pact with the Axis proved to be unpopular with the Serb population of Yugoslavia. Public demonstrations against the pact were climaxed on March 27 by a coup d'état engineered by Gen.

Dushan Simovich. Prince Paul and his pro-Axis ministers were driven into exile; youthful Prince Peter was proclaimed king. General Simovich headed the new government which, while professing friendly intentions toward the Axis, in effect repudiated the pact of March 25. There was rejoicing in London and Athens and public indignation in Berlin and Rome. If the action of Yugoslavia did not prevent a German military movement for the relief of the Italian army in Albania, it appeared that such a movement would now be rendered difficult and hazardous.

The Yugoslav army consisted of 30 infantry, 3 cavalry divisions, and 10 reenforced infantry brigades. Though the loyalty of Croatian units in the army was doubtful, Serb troops in the First World War had proved themselves to be tough and resourceful soldiers. Theoretically the mountainous terrain in southern Yugoslavia lent itself to defensive fighting. Unfortunately the army was lacking in modern military equipment and training. It was short of tanks, planes, anti-tank and anti-aircraft equipment. In addition the army was spread out over the whole frontier in a strategically hopeless cordon type of defense. Had the Simovich Government been given sufficient time, it might have corrected this elementary error, but Hitler never neglects any advantage in time. He struck on April 6.

There was a Greek force of 5 divisions commanded by General Papagos deployed behind the Metaxas line in Macedonia. The main Greek army (about 18 divisions) was operating against the Italians in Albania. It was commanded by General Tsolakoglu. Greek troops were well enough equipped to deal with the Italians and enjoyed a high morale. They were forced to rely on the British for air support. This disadvantage would be multiplied as soon as the Luftwaffe began to operate in the Balkans.

Sensing the possible development of a new front in the Balkans, the British Government assumed the risks involved by sending a small expeditionary force to Greece commanded by Gen. Sir Henry Maitland Wilson. It consisted of two infantry divisions (Australian and New Zealand) and one armored regiment. Relatively few bombers and about 100 first-line fighter planes were sent to Greece. There were said to be only seven useful military airfields in Greece. The appearance of British troops in Greece inspired the Greeks and Yugoslavs. It became clear that if Hitler wished to put Greece out of the war, he would have to strike through Yugoslavia. In this case he would face a total force of approximately a million Yugoslav, Greek, and British troops. Remembering the military prowess of the Serb troops in 1914-18, considering the rough terrain involved, counting the total potential troops which might be ranged against Hitler, the press and public of Allied and neutral countries anticipated a strong resistance to an attack. Many critics spoke of the Yugoslav decision to repudiate the Axis as the turning point in the war.

These hopes were unfounded. The appearances of Allied strength in the Balkans were deceptive. For fear of offending the Axis, the Yugoslav Government had declined to participate in joint British-Greek staff conversations. As a result there was no effective liaison between the Yugoslav army and the Greek-British force. As usual the Germans enjoyed the advantage of attacking two separate adversaries instead of a single enemy. So well advanced were Nazi military preparations in the Balkans that Hitler was forced to delay the start of the campaign only one week after the rebuff by Yugoslavia. On the morning of April 6 he declared war on Yugoslavia and sent his armies into Greece.

The Balkan Campaign (April 6-28). German troops in the Balkans on April 6 consisted of 32 infantry divisions (of which 4 were motorized) and 6 panzer (armored) divisions. These forces were divided into two armies. The second army (General Weichs) was stationed in Hungary; the twelfth army (Field Marshal List) was stationed in Bulgaria. Generals Löhner and Richthofen commanded two fleets of the Luftwaffe earmarked for the operation. One German army corps was stationed in Rumania south of the Timisul river. In addition the Axis could count on the second Italian army (General Ambrosio) stationed on the Yugoslav frontier in the Julian Alps. The Italian ninth army (General Biroli) and the eleventh army (General Geloso) were tied down in Albania, but could assume the offensive as soon as the Greek army in Albania was menaced. A Hungarian force of at least one army corps was concentrated north of the Banat.

Hitler's speech to the Reichstag on May 4 reveals that he gave orders for the assumption of operations as soon as the news of the Yugoslav coup d'état came. The general plan of operations called for a movement of General Boehme's corps of the twelfth army into Thrace via Rupel Pass and the Vardar valley toward Salonika with the objective of cutting off the Greek army defending the Metaxas line. Other elements of the twelfth army were to break through the Yugoslav border defenses to Skopje and ultimately join with the Italian armies in Albania. These two steps were to begin on April 6. Two days later Kleist's armored corps of the twelfth army was to advance into the Morava river valley and advance northward via Nish to Belgrade. The German corps in Rumania was to attack directly across the frontier toward Semlino and Belgrade. Three days later (April 11) the second army in the north would come into action. It was to drive across the Drave river toward Zagreb, then move along the Save toward Sisac, then southeastward toward Sarajevo. Other elements of the second army were to move along the Save toward Obrenovac and Valjevo. The Italian second army was to move along the coast into Croatia, then, picking up a small garrison at Zara, would attempt to join hands with the Italian troops in Albania.

The German strategy planned for the destruction of the Yugoslav armies before dealing with the Greek and British forces. The timing of the blows was deceptive, since it was natural to suppose that the first German stroke would fall in the north where the terrain was favorable and where the Croatian population was of doubtful loyalty to the Yugoslav Government. Instead, the first advance was to take place through the most difficult terrain in the south. It aimed at the conquest of the strongholds to which the Yugoslav armies were expected to retreat in case of defeat in the north. The second major surprise of the campaign was the speed with which the passes and valleys in the south were seized.

The war in the Balkans was essentially a struggle for roads and passes. Contrary to the common opinion the offensive in mountain warfare often enjoys real advantages over the defense. This has been pointed out by students of mountain warfare from Bourcet to Franchet D'Esperey. Working with the German forces in the Balkans were such experienced leaders in mountain warfare as Generals Falkenhorst and Dietl who had distinguished themselves in the Norwegian campaign. The German technique in mountain warfare was to employ the shock combat team of infantry and engineers to clear the way through the passes for their panzer divisions aided (as in the case of the penetration



Courtesy of Infantry Journal

GERMAN AND ITALIAN DRIVES IN YUGOSLAVIA

of the Maginot extension) by dive bomber attacks. Once through the passes, armored units aimed at the division or encirclement of enemy units by deep and rapid penetrations followed by motorized infantry or troops on foot.

The operations of Field Marshal List's twelfth army aimed at the separation of the Yugoslav and Greek armies. Surprise was attained at the decisive break-through points in the south by restricting German troop movements to the hours of darkness. At dawn on April 6 General Strumme's corps of the twelfth army moved against Skoplje. The way for his panzer division through Stracin pass was cleared by infantry. Breaking through the pass Strumme's mechanized units rolled forward under Stuka protection and reached Skoplje at 5 p.m. on April 7. It was a staggering development and completely upset the calculations of the Yugoslav high command. Another column of Strumme's corps consisting of motorized and foot infantry advanced on Carevo-Selo and Veles. Joining forces at Veles the two columns of Strumme's corps advanced to Prilep on April 10 and swarmed into the Monastir

gap. In four days the Yugoslav army had been cut off from the Greeks. The German forces were in a position to join hands with the Italians in Albania, and from their position in the Monastir region, threatened to outflank the British-Greek force which held a line from Florina to Katerina.

Simultaneously with these operations General Boehme's corps of the twelfth army moved against the Greek army in Thrace. While German infantry and engineer units fought a bloody engagement with the Greek defenders of Rupel pass, General Boehme's armored division advanced into the Strumitza river valley and occupied Doiran on the outskirts of the Vardar valley on April 8. It found the area virtually unprotected. Once in the broad avenue of the Vardar valley, the armored division rolled into Salonika almost without opposition on April 9. This development cut off the Greek forces defending the Metaxas line in the north and General Papagos surrendered his five divisions on April 10. Such were the developments of four days of war in the south.

Meanwhile farther north General Kleist's corps

of the twelfth army, concentrated astride the Nisava road, fought its way into the Morava river valley and captured Nish on April 9. Instead of moving southward from this point as was commonly expected, Kleist's corps raced northward up the Morava valley and entered Belgrade (which had been savagely bombed) on April 13. Kleist found that units of the German army corps which had advanced from Rumania were already on the outskirts of the capital. Combined with the unexpected outcome of events in the south, these blows broke down all cohesion in the Yugoslav army.

The final collapse was aided by the advance of General Weich's second army from Hungary. It was joined by a Hungarian army corps which advanced into the Banat. The second army captured Zagreb on April 11, Karvolac on April 12, and then raced toward Sarajevo. From the Julian Alps the second Italian army advanced into Slovenia and Croatia. Meeting practically no opposition it reached Ragusa on the Adriatic coast on April 17. Negotiations for the surrender of the Yugoslav army were begun on April 15 and went into effect

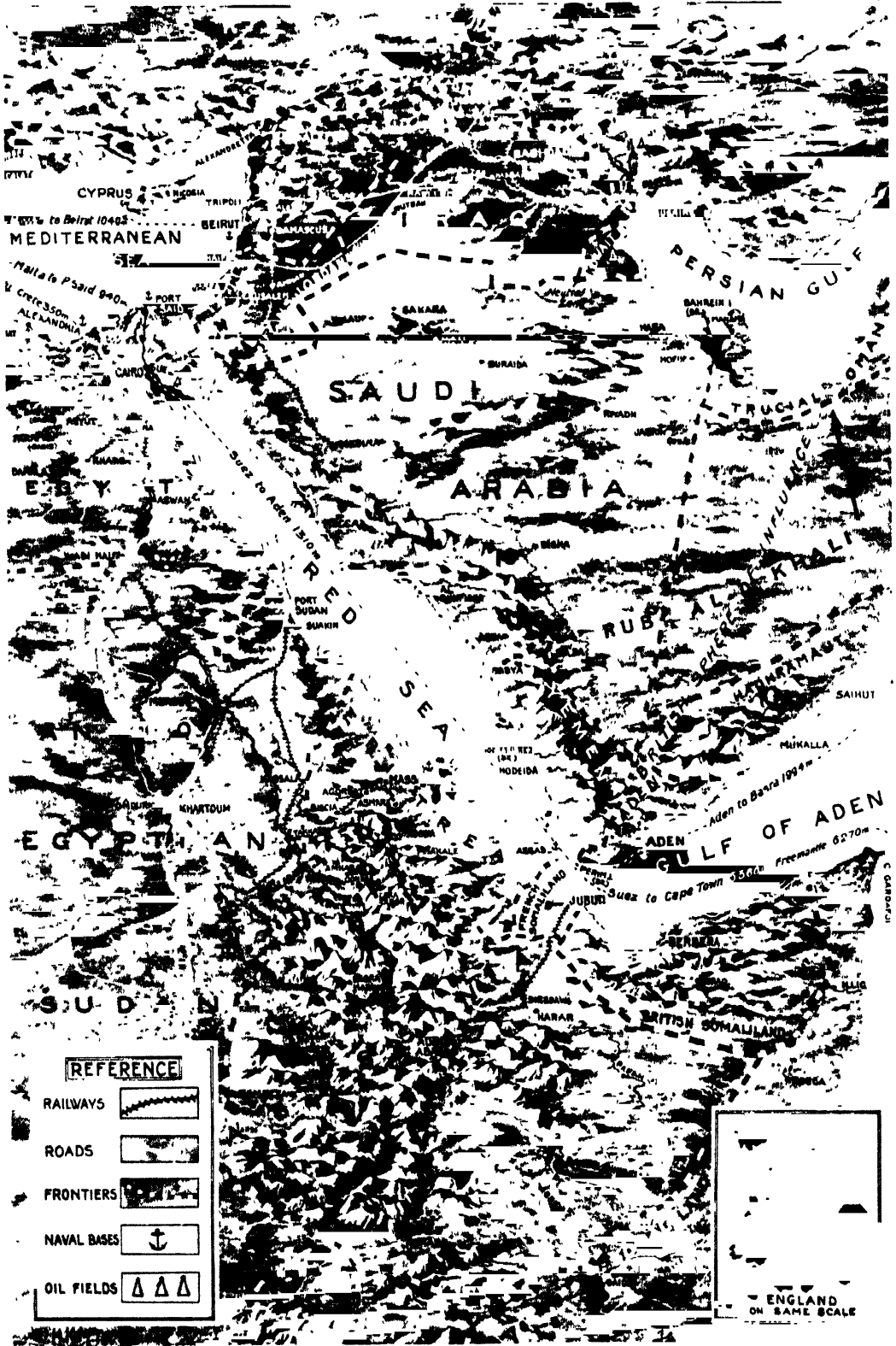
on April 17. Though the actual battle casualties of the Yugoslav army were not large, their strategical position on April 17 was absolutely hopeless. Nazi reports list 6,000 officers and 337,000 men as prisoners on April 17; others were rounded up later.

The Greek Campaign (April 10-30). The position of the British-Greek forces on the Florina-Katerina front was rendered hazardous by the appearance of German armored forces (General Strumme's corps) in the Monastir gap on April 10. From this position the Nazi forces threatened the left flank of the Allied line. In view of these developments and the surrender of the northern Greek divisions, General Wilson determined upon a policy of retirement and evacuation. From April 10 on the campaign in Greece hinged upon the efforts of the British and Greek forces in the central sector to defend the roads and passes leading into southern Greece long enough to permit the safe withdrawal of the British Expeditionary Force. It soon became apparent that the Greek forces in Albania could not be withdrawn rapidly enough to escape encirclement by advancing German units.



Courtesy of Infantry Journal

THE GERMAN CAMPAIGN IN GREECE



The Crown Colonist

BATTLEFIELDS OF THE MIDDLE EAST

Showing the terrain and other strategic features affecting the campaigns in Italian East Africa, Iraq, Iran, and Syria.



**PARACHUTE TROOPS
LANDING IN CRETE**

A picture, approved
by German censors,
actually made during
the Nazi invasion

(I N P.)

From April 11 to 12 the Australian division (General Blamey) fought a defensive action at the Florina-Vevi pass which held up the advance of General Strumme's corps. But this position was taken by the Germans on April 12, and two days later they occupied Kozani. From this point the Germans advanced through difficult terrain to Servia, Grevena and Kalabaka, reaching the latter on April 19. In this region German troops encountered disorganized Greek forces retreating from Albania. Quick to seize upon the disorganization of the enemy, General Strumme sent a motorized S.S. division racing from Kalabaka to Janina which it occupied late on April 19. This was another of those startling and unexpected moves by small and mobile German units which had so completely disrupted Yugoslav plans. The capture of Janina cut off the retreat of the Greek army in Albania and General Tsolakoglu surrendered his forces on April 24.

While these unhappy events were taking place, the major fighting in the West centered around the roads and passes leading to Larissa. Delaying actions were fought at the Servia-Stenaportis pass on the Kozani-Larissa road, and at the Petra and Tembi passes on the Katerini-Elasson and the Katerini-Larissa roads. General Boehme's troops entered Larissa on April 19. A defensive position at Thermopylae pass was held by the Australian forces from April 20-24 which enabled the British to retreat to the Chalcis-Thebes line. Evacuation of British troops from southern Greek ports had been underway for several nights. By use of parachute troops the Germans effected a crossing of the Corinth canal on April 26. Athens capitulated the following day. On April 28 the Germans advanced deep into the Peloponnesus. At the end of the month their occupation of the Greek mainland and adjacent islands was complete.

As early as April 21 the Greek Government admitted that the military situation was hopeless and requested the British Government to withdraw its forces. Operating mostly at night the British navy covered the withdrawal of 45,000 soldiers, losing two destroyers and four transports (500 casualties) in the operation. British casualties were estimated at 5,000 killed, wounded, and missing, and 10,000 prisoners. Overwhelming air superiority, superb coordination of all German forces, bold and imaginative leadership, crushing superiority in mechanized equipment, and relentless energy and individual fighting skill on the part of the troops, all combined to explain the quick and complete German triumph.

In addition to the Yugoslav prisoners (8,000 officers and 337,000 men), the Germans reported capturing 8,000 Greek officers and 210,000 men plus 10,000 British prisoners. Casualties of the German ground troops were placed at 57 officers and 1,042 men killed, 194 officers and 3,943 men wounded and missing. The casualties of the Luftwaffe were reported as 10 officers and 42 men killed, 36 officers and 104 men missing. Twelve of the German divisions in the Balkans were not engaged in the actual fighting.

The quick German conquest of Yugoslavia and Greece extended the Axis domination of Europe to the shores of the Aegean sea. It lowered British military prestige in the Middle East and restored flagging Italian morale. Turkey's western frontier was exposed to Axis military pressure. Active military assistance (though relatively unimportant) rendered by Hungary foreshadowed closer military collaboration between the Axis and its Balkan satellites. Since Australian and New Zealand troops

had suffered the heaviest losses of the Greek campaign, General Blamey was appointed second in command to General Wavell in the Middle East.

British Intervention in Iraq (April 19-June 1). Axis diplomacy had been active in the Middle East during the spring of 1941. By the terms of a treaty dating back to June 30, 1930, Britain enjoyed special privileges in Iraq such as the use of her railways, ports, and rivers. The treaty provided for the long-term lease of two military air ports to Britain and insured the uninterrupted flow of oil through the pipe-lines leading to the Mediterranean. Premier Rashid Ali Beg Gailani acquired power through a coup d'état and joined in the Axis efforts to turn the country against Britain. Sporadic fighting broke out in Iraq on May 1 when troops of Rashid Ali made an attack on the British-controlled airfield at Habbaniya. The "revolt" in Iraq seemed timed to coincide with the Allied defeat in Greece. German planes, which apparently used Syrian airfields for "forced landings," appeared at Mosul, Kirkuk, and Baghdad in support of the anti-British movement.

In anticipation of this development British troops were reported landing in Basra on April 19. A small British motorized force arrived at Habbaniya airfield on May 4, having made the trip from Basra in a single day. A strange battle between the Iraq forces employing artillery and the British forces employing planes and armored cars raged around the airfield for several days. British troops from Trans-Jordan and Basra eventually gained the upper hand; Rashid Ali fled Baghdad on May 30, and an armistice went into effect on June 1. The activity in Iraq coincided with the surprise German assault on Crete. Because of the relative ease with which it was handled by the British, it may be assumed that the "revolt" was prematurely put into effect by Rashid Ali, or was from the first regarded by the Germans as a diversion for the Crete attack.

German Conquest of Crete (May 20-June 1). The attack which fell upon the British and Greek garrison on Crete during the early morning hours of May 20, illustrated once again the unconventional character of Nazi military thinking. In one respect the Crete campaign was unique and portentous. Not that the conquest of the island itself was so important, but that the methods employed were revolutionary and held promise for further developments. Until the German assault on Crete it was regarded as a military axiom that ship-borne infantry were required for the invasion of an island. Nor was it regarded as feasible to undertake an invasion of an island until local command of the sea had been obtained. The British regarded the fleet as their first line of defense. After the Crete attack all doctrines regarding the power of naval forces to protect islands from invasion had to be revised. Air power wrote a new chapter in the history of war in the last weeks of May 1941.

The British (with Greek approval) had occupied Crete shortly after the Italian attack on Greece in the fall of 1940. Its possession afforded the British unique military advantages. From its flying fields British bombers could strike at Axis lines of communication in Libya. Suda Bay provided a useful advance base for British naval units in the eastern Mediterranean. The island was fairly well protected against a traditional landing from the sea. There was a garrison of 42,000 British and Greek troops under the command of Gen. Bernard Freyberg who had won a V.C. for personal bravery in the World War. Beaches were wired and mined. Machine guns in pill-boxes guarded stra-

tegic points. There was insufficient anti-aircraft artillery to protect the three principal landing fields—Rethymnon, Candia, and Maleme—and the garrison contained a number of men who had just been evacuated from Greece where they had felt the full power of the Luftwaffe. Having seen the relative helplessness of an army under the overwhelming air power of an enemy, they were in a sense psychologically conditioned for the German air assault which followed.

On May 20, after a week of heavy bombing, German parachute and glider troops were dropped in three important coastal areas near the British airports. So rapidly were these troops reenforced from the air, and so perfect was their equipment and organization, that they gradually drove the British and Greek forces from their positions around the airfields. The German operations were directed by General Löhner of the 4th air fleet. Many innovations such as the dropping of weapons in variously colored parachutes, the landing of anti-tank guns in parts, the supplying and munitioning of a force by plane were embodied in the German attack. It was the strangest battle of the war. The Germans were without tanks and artillery, but were constantly supported by bombers and ground attack planes. The British possessed tanks and artillery, but because the landing fields could not be defended against bombers, British pursuit aviation was withdrawn from the island at the end of the first day. This left the garrison without defense against German planes.

Disdaining a strategy of economy the Germans deliberately crashed transport planes carrying troops to Crete in order to keep the stream of reinforcements flowing. It was these unconventional forms of attack which upset British plans of defense. There was no chance of reinforcing the garrison from Alexandria in time to be of help. General Wavell made the distasteful decision to cut his losses. The evacuation of Crete was carried out under cover of darkness and protected by the British navy. Planes from the middle East command did their best to protect the convoys from the air. Fifteen thousand men out of a garrison of 42,000 were withdrawn. The rest were casualties and prisoners.

In keeping with its best traditions the British navy gallantly attempted to prevent the passage of sea-borne Axis troops to Crete. They cut up Axis convoys of small craft, sinking several troop-laden vessels. But in the operations around Crete British surface ships had to operate within easy range of German shore-based bombers. They were subjected to unmerciful bombing. Three British cruisers and four destroyers were sunk. Two battleships, an aircraft carrier, a cruiser, and other vessels were damaged. These were the heaviest losses sustained by the British navy in any campaign in the war.

The brilliance and audacity of the German plan of attack, the organization and precision of its development, won praise from even British critics. It reenforced the lessons of Poland, Norway, France, and Libya, that airpower was essential for the conduct of modern warfare. The fall of Crete seemed to indicate that other islands (perhaps England itself) had lost their ancient immunity from attack. Because no immediate German attack in the Middle East followed the Crete victory, many students of war think that it was primarily a vast and costly laboratory experiment which the Germans might conceivably repeat in some other area at a critical stage in the war.

Naval Action in the Strait of Denmark (May 24-26).

The unconventional character of German naval strategy, already revealed in the Norwegian campaign, was again demonstrated in May, 1941. Not possessing naval force great enough to engage in a line-of-battle fight with the British fleet, units of the German navy were used (as in the case of the *Graf Spee* and *Scharnhorst*) to fall upon British convoys and their protecting escort. Capitalizing on the morale-destroying victory then underway in Crete, and following the decisive victory attained by German arms in the Balkan campaign, the new German battleship *Bismarck* (35,000 tons), commanded by Adm. Günther Lütjens, carrying eight 15-inch guns, and the cruiser *Prinz Eugen* (10,000 tons) left Bergen harbor on May 21 to raid British shipping in northern waters. A British patrol plane reported their departure, and they were sighted on the morning of May 24 in Denmark Strait, between Greenland and Iceland, by the British battle cruiser *Hood* (42,000 tons) carrying the flag of V.-Adm. Lancelot Holland and the battleship *Prince of Wales* (35,000 tons). In a short engagement under conditions of poor visibility the *Hood* (eight 15-inch guns) suffered a direct hit in her forward magazine by an incredibly lucky shot from the *Bismarck* and sank with a heavy loss of life. The *Prince of Wales* was also hit but suffered minor damage. The *Hood* was the largest vessel in the British navy and her destruction in a fair fight (aided by the ten 14-inch guns of the *Prince of Wales*) with the new but smaller *Bismarck* had a profound if temporary effect on British spirit.

The engagement with the *Hood* fixed the location of the *Bismarck* but she was lost by pursuing vessels. Soon the full weight of the British navy was thrown across the supposed route of the *Bismarck*. Units from home bases including the *Prince of Wales*, the *King George V*, the *Rodney*, the *Ramillies*, and the aircraft carrier *Victoria*, concentrated in the zone of anticipated action. The battleship *Renown* and the aircraft carrier *Ark Royal* joined the chase from their Gibraltar base. After an apparently fruitless search, the *Bismarck* was located some 400 miles from Brest by a long-range American-built Catalina (Consolidated PBV) patrol plane. She was attacked at once by torpedo planes from the carrier *Victoria*. She was attacked again at 9:30 p.m. on May 25 by torpedo planes from the carrier *Ark Royal*. At least three torpedo hits were claimed on the *Bismarck* which reduced her speed. Surface vessels made contact with the *Bismarck* at 2 a.m. on May 26 when she was sighted by the cruiser *Norfolk*. Throughout the morning she engaged in a long range gunnery duel with the British battleships *Rodney* and *King George V*. Repeated hits by 15- and 14-inch salvos were scored on the hull and upperworks of the *Bismarck*. The range finally closed to a point where secondary batteries of the battleships and the guns of British cruisers joined in the attack. The *Bismarck* withstood 20 minutes of concentrated shelling at relatively close range. Observers in the British ships could see shell after shell rip through her frame. Finally her two main turrets and secondary guns ceased firing. The ship took a sharp list to port and lay helpless on the water. Two torpedoes fired at 11:01 a.m. by the cruiser *Dorsetshire* caused her to turn over and sink. Approximately 100 seamen were rescued. Since the *Bismarck* was said to have had 400 naval cadets aboard as part of their training schedule in addition to her regular crew, the German loss of life was very heavy.

The naval action at Cape Matapan and that beginning in the Strait of Denmark emphasized the

importance of aircraft carriers as a fleet auxiliary. In both cases planes from carriers made torpedo attacks on fleeing enemy ships which reduced their speed. In both engagements naval aviation proved to be the most important form of reconnaissance. The ability of the *Bismarck* to absorb punishment spoke well for German naval engineering and construction. Her loss left the German navy with but a single ship of her class (the *Tirpitz*). The loss of the *Hood*, though a serious blow to the British, did not alter her preponderance in surface strength over the Axis navies. The willingness of the German high command to risk a new ship such as the *Bismarck* on a raid in northern waters, which in itself could not affect the course of the war, showed clearly that Hitler was not fighting a traditional sea war, but regarded this merely as a diverting episode in his scheme (then already maturing) for a move against the bases of British sea power to be conducted on land. It may also have been carried out with the intention of influencing American action.

After the sinking of the *Bismarck*, the *Prinz Eugen* escaped to the security of Brest. There it joined the battleships *Scharnhorst* and *Gneisenau*. Repeated British bombing attacks were made against these vessels in June and July. Hits were claimed on two of the vessels though the extent of damage could not be estimated. The attacks were sufficiently annoying, however, that the Germans moved the *Scharnhorst* to La Pallice 240 miles south of Brest on July 22. A camouflaged tanker was placed in her berth but did not deceive the British observation planes. The *Scharnhorst* was located on July 23 at La Pallice by planes of the Coastal Command.

R.A.F. Raid of July 24. The largest daylight raid of the war by the R.A.F. was carried out on July 24 in an attempt to damage and immobilize these vessels. A great fleet of 4-motor Flying Fortresses (Boeing B-17), Sterling, and Halifax bombers, protected by fleets of fighter planes raided the ports of Brest and La Pallice. Equipped with turbo-superchargers the Flying Fortress bombers led the attack, flying at an altitude which made anti-aircraft fire and fighter interference ineffective. These were followed by waves of British bombers which plastered the target area with hundreds of heavy and armor-piercing bombs. Two direct hits were observed on the *Scharnhorst*, seven on the *Gneisenau*, and the *Prinz Eugen* was straddled by sticks of bombs. Other vessels and port installations were damaged. Fifteen British bombers were lost and seven fighters. Thirty-six German planes were claimed to be destroyed. No damage was suffered by the Flying Fortress planes. This raid did a great deal to change the attitude of the British air force toward the Flying Fortress type bombing plane. Early British military missions to the United States decided against the purchase of this type of plane in favor of the smaller twin-engine bomber of limited load and ceiling. The failure of the British air force to recognize the potentialities of the four-engine high altitude bomber early in 1939 may come to be regarded as one of the great blunders of the war.

The loss of the *Bismarck* and the damage inflicted by the R.A.F. raid of July 24 discouraged further raids by German surface ships. The campaign which opened in Russia on June 22, 1941, required the services of remaining German surface units in the Baltic Sea.

British Occupation of Syria (June 8-July 12). Many factors pointed to a German invasion of Syria at the end of the Crete campaign. Marshal Pétain on

May 13 announced new steps of collaboration with the Reich. German planes landed at French airfields in Syria on the following day en route to Iraq. These were at first described as "forced landings," but finally Gen. Henri Dentz, commander in Syria, announced that terms of the Franco-German armistice called for the use of French bases and airports by German forces. This was confirmed by the French ambassador to the United States. There were rumors that German troops and equipment had been landed at the Syrian port of Latakia. It seemed apparent that Vichy-France would not oppose a German advance through Syria. Accordingly on June 8, General Wavell sent Gen. Sir Henry M. Wilson with a small British and Free French force into Syria on a mission of "occupation." Gen. Georges Catroux, leader of the Free French Forces in the Middle East, prepared for the movement by making a "declaration of Syrian independence" (to be effective after the war). Every effort was made to win over the Vichy forces by propaganda, but Pétain's orders were to resist. General Dentz had a force of three divisions and some tanks and armored cars and a few planes. The British and Free French forces did not number more than two divisions; their equipment was described as "antiquated" by American correspondents. Serious fighting took place before Damascus, there were naval engagements off Syrian harbors and bombing attacks on Syrian cities. The Allied advance was slow.

It was a sad war in which neither side fought with much spirit. The Vichy-French were merely putting up a formal resistance in order to impress the Germans, and the British and the Free French regretted the casualties they inflicted as well as the casualties they suffered. It was one of the painful but inevitable consequences of the French decision to abandon the struggle in June, 1940, on the assumption that a traditional "peace" would follow. Damascus fell on June 21, but the event passed almost unnoticed because of the German attack on Russia the following day. After Vichy's "honor" was "saved" and about 5,000 casualties were suffered by both sides, an armistice went into effect on July 12. The Syrian campaign did little to increase British military prestige in the Middle East, but it forestalled a German advance into Syria (if one had in fact been intended). It also showed that Britain was finally prepared to take the initiative in security measures involving non-British territory, a fact which became apparent later in the occupation of Iran.

The Air War in the West. Germany did not renew her all-out attempts to bomb Britain in 1941. It became apparent in the spring that her air fleets were being used elsewhere. Luftwaffe units appeared in Italy, North Africa, and the Balkans. Improvements in radio equipment for the detection of night bombers and the development of special nightfighters (Beauforts) made night bombing increasingly costly for the Germans. British plane production steadily increased in spite of bombing raids, and since Britain received a substantial part of the increasing American production, her relative strength in the air developed rapidly in 1941. The Italian air force became progressively weaker through the obsolescence of her plane types and her production fell to an estimated 400 units a month. American production exceeded 2,000 units a month by the end of the year. Churchill announced that Britain had attained equality with the German air force in the fall of 1941 and could look forward to a growing margin of superiority in 1942.

The R.A.F. had long used the "invasion ports" of northern France as a training ground for bomber crews. Gradually the sweeps into enemy territory extended. It was observed in May and early June that German fighter plane strength in northern France was diminishing. Soon British pursuit planes were operating in daylight over northern France. These developments pointed to a possible transfer of German fighter squadrons to other areas. The mystery of the "softness" of the German air strength in France was cleared up when the Germans suddenly attacked Russia on June 22.

The assumption of large-scale operations in the East required the presence of nearly all of Germany's air power. The R.A.F. was quick to seize the initiative in the West. Round-the-clock bombing attacks were carried out against installations in France and western Germany. An estimated 4,000 tons of bombs a month were dropped on enemy targets from July to December. Britain enjoyed a period of almost bomb-free life from July to September when small-scale German raids were resumed. In addition to shipping planes to Russia (the first wing of the R.A.F. reached Russia on September 14) Britain diverted enough planes from her American receipts to give General Auchinleck an initial air superiority over the Axis forces in Libya on November 18 when his attack began.

The German Luftwaffe lost two of its leaders in November; Werner Moelders, leading ace, and Gen. Ernst Udet, plane construction expert, were killed in accidents.

The following tables show the lessening of civilian air raid casualties in Britain toward the end of the year and the British and Axis plane losses for the year 1941.

CIVILIAN AIR RAID CASUALTIES IN BRITAIN

Month	Killed	Wounded
January, 1941	1,539	2,023
February	739	1,068
March	4,298	4,794
April	6,068	6,902
May	5,394	5,181
June	399	461
July	501	447
August	169	136
September	217	269
October	262	361
November	89	155
December	34	55

* Revised lists of British Air Ministry. The figures for June on show the decline of German air activity over Britain after the beginning of the Russian campaign.

BRITISH AND AXIS PLANE LOSSES •
[Jan. 1, 1941—Dec. 6, 1941]

Location	R.A.F.	Axis
Britain	38	624
Western Europe ^b	1,431	852
Middle East	498	1,979
Destroyed by Royal Navy	...	321
Total	1,967 •	3,776 •

* Revised figures of British Air Ministry. ^b Including Mediterranean. • Total plane losses for 1941, according to Air Secretary Sir Archibald Sinclair in the House of Commons, Feb. 11, 1942, were: Britain, 2,192; Axis, 3,955. Free French losses and Axis losses in Russia are excluded.

The Atlantic Front. The combined threat of Axis U-boats and bombers against Britain's Atlantic lifeline assumed menacing proportions in the spring and summer of 1941. Axis control of virtually all the Atlantic coastline of Europe plus the development of new commerce-destroying techniques accounted for the increasing peril. Long-range German bombers, operating in a giant circle from Norway around Britain to the southern coast of France, spotted for submarines which hunted

convoys in wolf packs. The location and direction of convoys were reported to submarine commanders by radio. By firing salvos of torpedoes across the course of a large convoy U-boats were certain to destroy a number of vessels. Often the attacks took place on the surface at night and were carried out both by torpedo and gunfire. Long range bombers attacked poorly protected convoys with bombs. Against these methods traditional commerce-protecting techniques were not effective. The toll of British and neutral shipping losses mounted steadily in the spring and summer of 1941. In June, 1941, the British suspended their traditional policy of announcing monthly shipping losses. This was an admission that either the losses were grave enough to conceal or that their previous policy had been ill-conceived.

The following table gives weekly shipping losses in British and neutral bottoms to April 1, 1941.

ALLIED AND NEUTRAL SHIPPING LOSSES

Week Ending	Number of Shps	Tonnage *
January 5	4	15,000
January 12	7	37,500
January 19	19	58,000
January 26	9	33,400
February 2	15	57,000
February 9	13	29,000
February 16	12	37,000
February 23	14	60,000
March 2	29	148,000
March 9	25	98,000
March 16	23	71,000
March 23	37	147,000
March 30	20	77,000
<i>Month</i>		
April	149	488,000
May	98	468,000
June	78	329,000

* These figures are based on British reports and must be considered merely as approximations.

Though no figures on shipping losses are available for the last half of the year, Admiralty statements have made it clear that they declined in August and remained at a figure approximately 1/3 that of the first half of the year. The use of improvised flying decks on merchantmen from which a single Hurricane fighter could be launched cut down bombing losses, though it entailed the loss of the fighter plane if the action was far from shore. The employment of long-range Catalina patrol planes also increased the effectiveness of convoy protection. The importance of the battle of the Atlantic was emphasized in Churchill's speech of November 12 in which he revealed that no large-scale Allied landing operations would be possible until 1943 for lack of shipping. He also announced the Hess revelation that Hitler anticipated that Britain could be brought to terms by submarine warfare. That anticipation ran counter to the American determination to keep the Atlantic trade lanes open. See SHIPPING; NAVAL PROGRESS.

United States and the Atlantic. The American stake in Britain's survival became clear after the collapse of France in June, 1940. That great disaster caused an immediate overhauling of American naval and military policy. A two-ocean navy was announced on June 22, and on September 16 the first peacetime conscription bill in our history became law. When continuous aid to the nations resisting "aggression" became impossible on cash-on-the-line conditions, the Lease-Lend Act was passed on March 11. The changing attitude of the United States was further revealed on March 30 when German, Italian, and Danish shipping in American ports was seized. To counter the possible Axis use of Greenland for submarine or weather information stations, the United States assumed "pro-

tection" of that island on April 10. A state of limited national emergency was proclaimed by the President on May 27.

The war on the Atlantic was brought home to the United States on May 24 when the American steamship *Robin Moor* was sunk by enemy action in the south Atlantic far outside the proclaimed war zone. Axis credits in the United States were frozen on June 14 and two days later their consulates were closed. An American base was established on Iceland on July 7 and bases in Ireland were projected. In August an eight-point Atlantic charter (see ATLANTIC DECLARATION) was announced by Churchill and Roosevelt after a dramatic meeting at sea. The destroyer *Greer* carrying mail to the garrison on Iceland was attacked by a German U-boat on September 4. Thereafter the tempo of attacks increased. The steamship *Steel Seafarer* was sunk in the Red Sea by bombing planes on September 5. Five days later the steamer *Sessa* was sunk. On the following day the steamer *Montana* was sunk and the President issued a "shoot-on-sight" order to the American Atlantic patrol, but the toll of sinkings went on. The *Pink Star* fell victim to a Nazi torpedo on September 22. American patrol vessels soon suffered. On October 17 the new destroyer *Kearny* was torpedoed off Iceland but reached port. The loss of eleven American sailors aroused the country, but these losses were overshadowed by the sinking of the old destroyer *Reuben James* on October 23 with the loss of nearly 100 men. As a result of these attacks and other provocations Congress repealed all remaining provisions of the Neutrality Act on November 14. American ships were henceforth to be armed and free to enter the war zones. The chain of American outposts in the Atlantic was widened on November 25, when, with the approval of the Dutch government, an American force was landed in Dutch Guiana (see SURINAM). With the extension of Lease-Lend aid to Free French forces and Turkey in the first week of December, the United States had abandoned all but formal pretenses of remaining at peace with the Axis.

Background of German Attack on Russia (June 22). No decision in the utterly unpredictable career of Adolph Hitler produced more surprise than his sudden attack upon Russia on June 22. Military critics had frequently pointed to Suez as his next objective after Crete. Indeed, the Allied invasion of Syria was made with the specific purpose of countering such a movement. General Rommel's force entrenched at Solum was expected to advance simultaneously. Yet the long-heralded drive toward the Suez did not materialize. Instead vague rumors developed about the increasing tension in German-Russian relations.

The strange flight of Rudolf Hess to England on May 12 gave rise to speculations about a possible change in Nazi war policy. Presently Winston Churchill warned Russia of an impending German stroke. On June 13 Stalin warned his nation to be prepared for all emergencies. The United States froze all Axis credits on June 14. There was a noticeable lull in German air activity in the West. On June 18 Germany signed a 10-year non-aggression pact with Turkey which protected her southern flank in case of a war with Russia. Hitler made what he later called "the most difficult decision of his life" on June 22. He declared war on the Soviet Union.

From a military point of view it was hardly possible for Hitler to launch an all-out attack on Britain without being absolutely certain of his

eastern flank. There were two German schools of thought about Russia. One was led by the famed geopolitics teacher, Dr. Karl Haushofer of Munich, who urged a friendly orientation and joint exploitation of Russian resources and living space. Dr. Alfred Rosenberg, on the other hand, advocated a conquest of Russia and the physical destruction of communism. There was a growing suspicion that Russia was using the period afforded by the pact of Aug. 23, 1939 to prepare for the ultimate struggle with Germany. Hitler and his staff decided not to wait until Russian preparations were complete. He again "placed the fate of Germany in the hands of its soldiers."

Behind the decisive step of June 22 lay the shadowy outlines of a vast continental war for world power which threatened to engulf Asia, Africa, and even America before its course was run. Its outbreak was accompanied by the German claim of fighting a sanitary war against communism. A number of allies and puppet states immediately rallied to the Nazi banner. Hungary, Rumania, Finland, Slovakia, Albania, and Italy joined in the war. The German attempt to split the democracies on ideological grounds, however, was unsuccessful. Britain and Russia signed what amounted to a virtual alliance on July 13. The United States joined in the Moscow conference in September and soon extended financial and military aid in the form of supplies to Russia.

Alignment of Forces in the East. Though the exact numbers of German and Russian forces were not known, it was estimated that Germany had concentrated at least 150 divisions against Russia in June. These were supported by an estimated 15,000 tanks and four fleets of the Luftwaffe. They were divided into three army groups. The northern army group consisting of the 18th and 16th armies, operated along the Baltic in the direction of Leningrad under the command of Field Marshal Ritter von Leeb. The central group made up of the 4th and 9th armies operated from Poland toward Minsk, Smolensk, and Moscow under command of Field Marshal Fedor von Bock. The southern army group composed of the 6th and 17th armies operated against the Ukraine under Field Marshal Gerd von Rundstedt. The Rumanian forces commanded by Gen. Ion Antonescu were under orders of Rundstedt. In the far north Finnish forces under Marshal Baron Mannerheim cooperated with small German forces led by Gen. Nickolas Falkenhorst. Italian forces which later appeared on the Russian front were commanded by Gen. F. Ingales, and the Spanish Blue Division was led by Gen. A. Munoz Grande. Hitler remained at his field headquarters in the East throughout the first stages of the war and took the unusual step of issuing communiqués directly from his personal headquarters.

The Soviet Union always maintained strict secrecy about its military forces. It might be assumed that the weaknesses revealed by the ill-starred Finnish campaign had been corrected by June 1941. Her active army and first line reserve was estimated at 175 divisions with an additional reserve of 8,000,000 partially trained men. The amount of her useful military equipment was the most important question mark, for the war had demonstrated the weakness of mere numbers. The quality of Russian military leadership was thought to have suffered from periodic political purges and from the institution of political commissars with the troops. Her tank force was estimated at from 10-20,000 tanks. The Russian air force was large but was thought to be of doubtful quality. Marshal S. Timoshenko was Commissar of Defense; Gen. K. A. Meretskov, chief of staff.

Predictions of an Early Russian Collapse. Fighting began on a 2,000-mile front from northern Finland to the Black Sea on June 22 amid predictions of an early Russian defeat. Military "experts" in Allied and neutral countries estimated Russian capacity to resist at from six to twelve weeks. It was argued that the German general staff would hardly undertake an invasion project which could not be completed before winter. These estimates were inspired by the speed of previous campaigns and by the almost legendary reputation of the Nazi army for efficiency in modern war. They were also based upon a false interpretation of the Finnish war of 1939-40 and upon an ignorance of Russian military preparations and war potential. It was only when the main military might of the Soviet Union was slowly applied, and when the two revolutionary military efforts met head on, that the full implications of the Russo-German struggle and its relation to the World War could be envisaged.

The first reports of operations in the East seemed to confirm the forecasts of a Russian defeat. A fifty-mile withdrawal of Russian forces from the frontiers was announced. Though the main German objective was the destruction of Russian field armies, the course of the war can best be traced in terms of areas occupied and cities taken. The wildly divergent reports of the belligerents on losses suffered and inflicted on the enemy do not give (at this stage) a reliable measure of the military results obtained.

Initial Operations in the East (June 22-July 11). Rapid advances followed the German declaration of war on June 22. Grodno fell on June 23 and Brest Litovsk the following day. Then for six days the German Government withheld information on operations in the East, promising a sweeping victory communiqué would shortly follow. After having postponed the promised communiqué three times, it was finally delivered on June 30 in twelve parts each introduced by a fanfare of martial music. The encirclement and destruction of two entire Soviet armies at Bialystok, the destruction of 2,583 planes, 2,223 tanks, 2,400 armored cars, and gains in the Baltic area were claimed. It was apparent that the familiar technique of rapid deep penetrations by tank divisions aiming at the encirclement and destruction of small units of the Red army was being employed. Minsk was reached on July 1, Borisov and Brobrusk on July 3. This placed the armies of Marshal Bock within 200 miles of Moscow.

It was after these first spectacular advances that the unorthodox character of Russian fighting revealed itself. In normal war areas behind the enemy advanced positions could be regarded as conquered, but Russian irregulars and guerrilla fighters continued to operate against German outposts and communications long after the front had advanced. Though claiming a total capture of 300,000 prisoners, and the destruction or capture of 7,000 Russian planes, 4,000 tanks, and 3,000 guns, the German high command was forced to halt briefly for reorganization on July 11. Up to this time the Russians had not launched a major counter attack.

Operations July 15-September 1. The German drive was resumed on July 15 with rapid advances on all fronts. The so-called "Stalin line" (a loosely defined defense area in depth back of the old Russian frontier) was said to have been broken "at all decisive points." The outskirts of Smolensk were reached on July 17, but Russian resistance in this sector hardened and the city was not entirely in German hands until August 15.

On the Baltic front the armies of Marshal Leeb occupied Estonia, Lithuania, and Latvia in July

and August. Naval operations were undertaken against the Russian-held islands of Moon, Dagö, and Oesel. On August 12 Hitler appointed H. Lohse as governor of the newly created Ostland province, showing that the conquest of the Baltic states was complete. Thereafter the armies of Marshal Leeb advanced against Leningrad in cooperation with Marshal Mannerheim's Finnish troops who advanced against the Karelian isthmus. In the extreme north General Falkenhorst's troops cut the Leningrad-Murmansk railway at Kandalaksha and attacked the port of Murmansk.

Gradually the territorial objectives of the three German army groups began to center around the cities of Leningrad, Moscow, Kiev, and Odessa. The most dangerous advances in August were made on the southern front. Kiev was reached on August 8 and Odessa on August 13. Since the Russians were fighting a delaying action and had adopted a "scorched earth" policy, these cities were defended. Kiev resisted until September 20 and Odessa until October 16. The garrison of Kiev (estimated at 400,000 men) was lost, but part of the Odessa garrison was withdrawn by sea. The major forces of the Russian southern army were withdrawn across the Dnieper river on August 16, and the great hydro-electric plant at Dniepropetrovsk was dynamited on August 23. Perhaps General Budenny's leadership had something to do with the rapid deterioration of the Russian military position in the south. He was replaced on October 24 by Marshal Timoshenko who was transferred from the Moscow front. At the end of August the German forces had captured Nikoleav on the Black Sea coast and threatened the Donetz basin and Crimea.

Due to the superior network of railways and the proximity to war industries Russian resistance in July and August was more successful on the central and northern fronts. There were heavy Russian counter attacks on the Moscow front near Smolensk. The principal German advance was made at Gomel. In the north Marshal Leeb captured Novgorod on August 26, Tallinn on August 29, and the Finns occupied Viborg on August 30.

The Northern Front (September 1-December 31). Axis lines of investment were drawn around Leningrad by the capture of Taipale (September 2—by the Finns) and Krasnoe Selo by the Germans on September 3. The fall of Schlüsselburg, the great railway center, on September 9 brought Leningrad within artillery range. Systematic bombardment of the city's outskirts began on September 10. Marshal Voroshilov put the entire civilian and military population of Leningrad at work on the defenses. From mid-September on operations around Leningrad took on the character of siege warfare with occasional Russian counter attacks. General Khorzin replaced Voroshilov as commander of the Leningrad garrison on October 24. Budenny and Voroshilov were detailed to supervise the training of Russian reserves. The Leningrad defenders joined in the general Russian counter attacks beginning on December 6 and made substantial progress toward clearing the Leningrad-Moscow railway line.

Central Front (September 1 to December 31). Russian counter attacks in the Smolensk and Bryansk sectors of the central front slowed up the German advance on Moscow in September. When these subsided in the first week of October the German armies launched a series of extremely powerful blows on this front. They were introduced by Hitler's speech of October 3 in which he promised the German people that the mighty attacks underway would crush all Russian military resistance. Orel fell into German hands on October 9. This gave Dr. Otto

RUSSIA'S OUTER BASTIONS FALL BEFORE THE NAZI ADVANCE



Courtesy of The New York Times

Dietrich occasion to assert on October 10 that serious Russian military resistance was definitely at an end. He pledged his personal word to press correspondents as to the truth of these revelations. For a time it seemed that his words might be vindicated. A serious deterioration of the Russian military position followed. Bryansk fell on October 13, Vyazma on October 14, and Tula on October 16. The seat of the Russian Government was transferred to Kuibyshev on October 17. But snow began to fall on the Moscow front on October 23. General G. K. Zhukov replaced Marshal Timoshenko as commander of the central front on October 24. Stalin stayed in Moscow in order to encourage the defenders and ordered a foot-by-foot defense of the city. By the end of October it was clear that the first great German effort would fail to capture the former Russian capital.

The final German drive on the central front began on November 15 after local Russian counter attacks. Volokolamsk was reached on November 22, and a German spearhead, which passed up Kalinin on November 25, reached Klin, only 31 miles from Moscow. Heavy assaults followed in the Mozhaisk sector from November 25-28, but the battle passed its crest at the end of the month with Russian counter attacks developing at all menaced points. The great German effort to knock Russia out of the war by capturing Moscow and destroying Russian armies had failed. The troops on the central front had to be withdrawn to areas where better shelter existed. Sub-zero weather lowered German morale already affected by very heavy losses and failure. Stalin's country had done what no other nation had succeeded in doing, it slowed up and finally turned back the hitherto invincible German Wehrmacht.

And it was the failure of the German attacks on the central front in October and November which upset the whole plan.

Southern Front (September 1–December 31). While the decisive campaign of the war was being waged on the central front from September to December, the most spectacular advances were made by the Germans on the southern front. Marshal Rundstedt's armies crossed the Dnieper at many points early in September and advanced against Chernigov, which fell on September 13. Kiev, which had been under siege since August 8, surrendered on September 20 with a loss of about 400,000 men. Poltava was captured on the same day, and two days later the German troops reached the Sea of Azov. For nearly a month they were held up in their efforts to break through the front at Perekop leading to the Crimean peninsula. Other units of Rundstedt's command captured Mariupol on October 8, Taganrog on October 22, Stalino on October 22, and Kharkov on October 26. These advances menaced the extremely important industrial resources of the Donetz basin.

The penetration of the Crimean peninsula was achieved on November 1 when parachute troops aided in breaking through the defenses at Perekop. The Russian forces on the Crimea withdrew to defensive positions at Kerch and Sebastopol. Sumferopol, the capital of Crimea, fell into German hands on November 3. Kerch held out until November 18, and Sebastopol continued to resist until the end of the year. Assuming the offensive on the Crimean front, Russian troops recaptured Kerch on December 30.

A German advance into the Donetz region led by General Kleist captured Rostov on November 23. Further advances by this army were met by a determined Russian counter attack which led to the recapture of Rostov on November 30. This event was regarded as singularly important since it was the first major Russian city recaptured from the enemy. Its importance was emphasized by the further retreat of the German armies in the south to Taganrog on December 4. The German retreat in the direction of Mariupol continued. At the end of the year Russian armies in the south were approaching Kharkov and Stalino. Pressure on the Donetz Basin was being relieved and Russian forces on the Crimea were passing to the counter offensive.

Russian Counter Offensive (December 3–31). The German decision to postpone the conclusion of the Russian campaign until spring was not a matter entirely dictated by their own choice. From October 3–December 3 the German armies on the central front had been engaged in the greatest military operation in history. At tremendous cost they had pushed to within 31 miles of Moscow, but they failed to take the city, and they were ill-prepared for a winter campaign. Sub-zero cold and heavy losses affected the morale of troops. The enemy which had been repeatedly described as "destroyed" now took the offensive from Leningrad to the Sea of Azov. Showing great aptitude for winter fighting and unsuspected reserves in war equipment, the Russian troops pushed back the invader on all fronts. Both Hitler and Goebbels made frank appeals to the German people on December 21 for any kind of warm garments for the troops in the East. Hitler frankly admitted that the enemy was superior in manpower and equipment on the eastern front. Marshal Fedor von Bock, commander-in-chief on the central front was made a scape-goat for the defeat. Finally on December 23 Hitler announced the retirement of Marshal Walther von Brauchitsch, head of the Wehrmacht. Following "an inner call" Hitler announced that he had taken

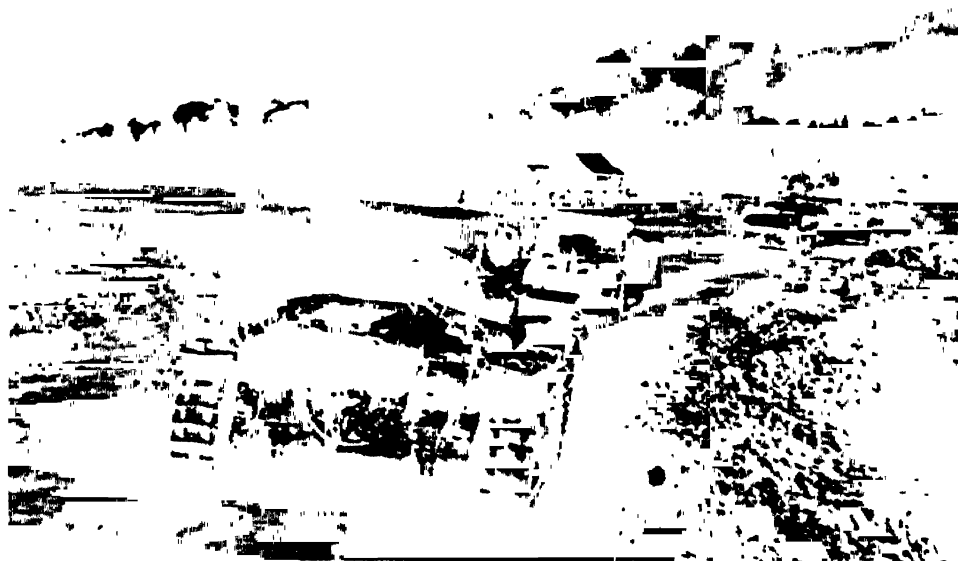
over the supreme command of all the armed forces in his own person. The line of furthestmost German penetration into Russia and the line on December 31 is shown on the accompanying map.

Estimated Casualties on the Eastern Front. Except in its early stages the Russian campaign was unlike any other war conducted by the Wehrmacht. Here for the first time they were opposed by a people prepared to wage total war. Though Germany possessed a qualitative superiority in planes and perhaps in tanks, she did not possess marked superiority in quantity of equipment, and was inferior in potential military manpower. From October on the losses on both sides were extremely heavy. Alexander Shcherbakov, Director of the Soviet Bureau of Information, placed Russian casualties up to October 6 at 1,128,000 men killed, wounded, and missing. In the six weeks of heavy fighting between this date and November 20, he admitted that Russian casualties had mounted to a total of 2,122,000 men killed, wounded, and missing. Nearly a million casualties had been suffered in six weeks. These losses exceeded those of the most intense periods of the First World War.

German losses cannot be accurately estimated. Hitler's announcement on December 11 that the German losses on the eastern front up to that time totalled only 162,314 killed, 517,767 wounded, and 33,324 missing seemed utterly fantastic in the light of the German retirement to new positions and his decision to abandon the offensive until spring. Field observers of the U.S. Army in Russia estimated German losses to December 11 at 1,300,000 killed and 2,600,000 wounded and missing. Somewhere between these estimates was the true picture of German losses in the East. Hitler's claim in December of a total bag of 3,800,000 Russian prisoners, the destruction or capture of 21,000 tanks, 32,000 guns, 17,375 planes seemed equally fantastic. Had the Russian army suffered such losses in personnel and material, it would hardly have been possible for that army to assume the counter offensive on all fronts in December.

Russian Economic and Industrial Losses. Since the conduct of modern war depends primarily on industrial output and economic resources, the extent of Russian losses in these elements should be noted. By the end of the year, Russia had lost the entire Ukraine with approximately 18 per cent of her prewar industrial output and tremendous agricultural resources. Leningrad with 13 per cent of her industrial resources was under siege. Moscow with 15 per cent of her total industrial resources was within range of German bombers. Part of the Donetz Basin with 60 per cent of Russian iron ore and 50 per cent of her coal output was still in enemy hands, and might be lost to German advances in the spring. The oil producing areas of the Caucasus were still safe from enemy threat, but the Russian transportation system had been heavily taxed by war demands. How extensively the Russians had been able to transfer war industries from menaced area in the west to more secure locations in the east could not be estimated, but their plans and organization for total war were far better than anything achieved in democratic countries.

British and American concern for Russian supplies took the form of a conference in Moscow during the first weeks of September. A broad program for Allied aid to Russia was mapped out. Unfortunately the problem of transporting supplies to Russia was complicated by enemy action in cutting the Leningrad-Murmansk Railway. This left only Vladivostok and Archangel as useful ports of entry. Neither were ice-free in winter, and Japanese bel-



Wide World Photos

THE BLITZKRIEG BOGS DOWN

German tanks advancing into Russia past a burning town.
Nazis trying to extricate themselves from Russian mud.



Wide World Photos

THE RUSSIAN PEOPLE VS. THE NAZI WAR MACHINE

Scorched earth remains for the invaders where fleeing Russians have destroyed their towns
Civilians dig anti-tank defenses in the snow at the approaches to Moscow.

ligerency soon ruled Vladivostok out. These considerations prompted Allied action in Iran in order to safeguard a southern route for war supplies to Russia.

Anglo-Russian Occupation of Iran (August 26–September 16). Britain followed her occupation of Syria by demands that Axis tourists, engineers, and agents be expelled from Iran. When evasive answers were returned, a joint Anglo-Russian invasion of the country took place on August 26. British troops took over control of the oil pipeline at Abadan and Bandar Shahpur. Russian troops occupied Tabriz. After an overturn of the government, the new premier, Ali Furanghi, appealed for an armistice on August 29. When the armistice terms calling for the speedy exile of Axis sympathizers were not carried out, and local unrest threatened the Shah's position, Allied troops occupied Terehan on September 16. Riza Shah Pahlevi abdicated in favor of his son. As a spring campaign in Russia loomed as a certainty, and as the war spread to new theaters, the importance of the Iranian route to Russia increased. Efforts were undertaken to increase the capacity of ports and improve the single-track trans-Iranian railway. Gen. Sir Godfrey Rhodes was placed in charge of maintaining communications in Iran. See map and text, p. 289.

Changes in British Commands (July 1, November 26, December 25). After the Russian war was a week old, and shortly after his ill-starred effort to drive the Axis forces from Solum on June 15, Gen. Sir Archibald P. Wavell, was abruptly transferred to the India command. Sir Claude Auchinleck, a 54-year-old Scotsman, who had served at Narvik and as commander-in-chief in India, replaced him in the Middle East Command. The British movement toward securing younger officers for fighting commands appeared in the appointment of 44-year-old Gen. Neil M. Ritchie to succeed Gen. Sir Alan Cunningham as commander of the VIIIth British army in Libya on November 26. Gen. Sir John Greer Dill, who retired for age as Chief of the Imperial General Staff on December 25, was replaced by 58-year-old Gen. Sir Alan Brooke, a tank man who had distinguished himself in Flanders. At the same time Gen. Sir Archibald Nye (45 years) was made vice chief of the imperial general staff. Gen. B. C. T. Paget (54) replaced General Brooke as commander of the home forces.

British Offensive in Libya (November 18–December 31). The gradual reinforcement of British troops in Egypt and the arrival of American lease-lend war equipment in the Middle East gave General Auchinleck a margin of superiority over Axis troops in Libya in the matter of tanks and planes. The burning sands of north Africa were to provide the first testing ground for American tanks. American planes had already been tried in war but never on so large a scale in a single theater. The location of General Rommel's Axis Korps at Solum with its veteran tank formations constituted a continual threat to Egypt and the Suez. British public opinion throughout the summer of 1941 clamored for the establishment of a new front to relieve German pressure on Russia. These demands were met in part by the British offensive against Rommel which began on November 18.

Though possessing some similarity to the situation which faced General Wavell in December 1940, the military position on the Egyptian-Libyan border in November 1941 was fundamentally different. Tobruk, some 70 miles behind the enemy's lines, was still in British hands after a long Axis siege. From April to November the Axis had built up a strong front running from Solum-Halfaya Pass-Sidi

Omar-Maddalena-Jarabub. It was wired and entrenched. Behind it Axis mechanized forces (the Italian "Ariete" division, and two German armored divisions—the 15th and 21st) were concentrated. They constituted the real defense of Libya and the real threat against Egypt. In December 1940 General Wavell possessed a small tank force but operated against a weaker enemy. In November 1941 General Auchinleck possessed a strong tank and air force, but operated against an enemy well provided with both these weapons. Unless the German tank and air force could be destroyed no decisive victory could be achieved in Libya.

Only one member of the victorious British Middle East team of December 1940 was still in this theater. He was the war-experienced admiral of the Eastern Mediterranean Fleet, Sir Andrew B. Cunningham. General Auchinleck, who had replaced Wavell on July 1, was new to the front. In command of the VIIIth British army, which was to make the assault, was General Sir Alan Cunningham (brother of the admiral), who had distinguished himself in the conquest of Ethiopia. Vice-Air Marshal Sir Arthur Coningham commanded the R.A.F.

The British attack of November 18 attained a measure of strategical surprise. General Rommel apparently misjudged the strength of the British in mechanized equipment and planes. The British gained immediate command of the air and their concentrations of tanks broke through the Axis line in the south between Maddalena and Jarabub while a holding attack was made by Indian infantry on the Solum-Sidi Omar front. Favored by initial surprise British tank formations raced north and westward apparently cutting off Nazi units and severing their lines of communication. One British motorized unit headed westward for the Gulf of Sidra north of El Agheila. On November 20 British units were within ten miles of Tobruk. The encirclement of Axis tank forces east of this position seemed complete and their destruction certain. Optimistic reports on the course of the battle were issued from Cairo. But when the main force of Axis tanks were encountered near El Rezegh a battle of confusion ensued in which British plans were nullified.

General Rommel proved himself to be a resourceful tank commander. Though cut off from some of his supply bases, he handled his tank forces with such skill and resolution that he was ultimately able to fight his way out of the British trap, and though suffering heavy losses in machines (the Italian "Ariete" division in particular) made his way westward on November 25 toward Gazala and Derna. The Axis facilities for supply and repair of tanks apparently were much better than General Cunningham had expected.

The following day General Cunningham was replaced by Gen. Neil Ritchie. Both sides brought up reinforcements for the wearing down struggle which followed. From November 26 on the new British commander sought to destroy enemy tank formations in a stand up battle of attrition. By December 11 Rommel had made good the retreat of what remained of his tank force to El Gazala, leaving Axis troops and garrisons at Bardia and Solum still resisting. The long-suffering British garrison at Tobruk was finally relieved on that day (after earlier contacts had been lost). Savage rear-guard actions were fought in the vicinity of El Gazala from December 15–17, in which the Axis tanks sought to escape destruction by further retreat. On December 18 it was announced in Cairo that a total of 10,000 Axis prisoners had been taken in the first month of the offensive.

Meantime British naval units operated relentlessly against Axis lines of communication in the Mediterranean. British and Dutch destroyers surprised a convoy off Cape Bon on the night of December 11 and sank two cruisers thought to be the *Alberto di Gussano* (5,000 tons) and the *Alberico da Barbiana* (5,000 tons), a destroyer, and three transports. At the end of December it was announced that more than 60 Axis ships had been sunk in the Mediterranean since November 18. It appeared that the battle over Libya might hang on the ability of either force to ensure the supply of reinforcements to the battle front.

General Ritchie renewed the battle with great vigor on December 19. British tanks broke through Axis defenses at Derna capturing the airport and nearly 100 planes. The town of Derna fell on December 21 and the Axis retreat toward Bengazi began. Barce fell on December 23, and British troops entered Bengazi on December 25 well ahead of General Wavell's schedule in 1940. General Rommel retreated with all his available armored units to Agedabia some 90 miles south of Bengazi, and, as the year ended, new British strokes aimed at the destruction of his tank forces were under way.

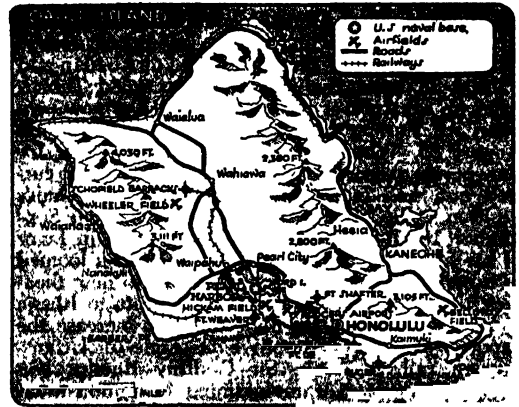
The assumption of supreme command by Hitler on December 23 pointed to the development of new military movements. It was felt that some bold stroke such as a move through Spain to north Africa or an invasion of Turkey might be attempted in order to offset the defeat in Russia. These possibilities gave added importance to the life-and-death battle being waged in Libya. In order to forestall either of these moves, it was necessary for the British to complete the destruction of Rommel's army in the shortest time possible.

Second World War Begins (December 7). Tension in the Far East mounted steadily during the summer and fall of 1941. American commercial and financial restrictions were imposed on Japan while the latter used her position in French Indo-China to menace British, American, Dutch, and Chinese interests. When negotiations between the United States and Japan threatened to break down, special emissary Saburo Kurusu was sent to the United States late in November to keep them going. There were other indications that the war, once confined to the continents of Europe and Africa, would spread. Vichy France was still involved in tortuous negotiations with Germany which threatened to place her African bases and fleet at the disposal of the Axis. Efforts of Britain and the United States to divorce Finland from the Axis were ineffective. Britain finally declared war on Finland, Hungary, and Rumania on December 7. But this was merely a formality and did not involve military action. Far more important and real was the sudden and treacherous Japanese attack on Pearl Harbor which coincided with these steps.

Japan Strikes Without Warning. While her diplomatic representatives were blandly talking to the American Secretary of State, Japanese bombers operating from carriers which had escaped American patrols launched a sudden and savage attack on the American naval base at Pearl Harbor and on the military establishments on the island of Oahu. Coming in the dawn of a Sunday morning when the United States was at peace and still maintaining diplomatic relations with Japan, the attack caught the army and navy "off the alert." Ships were attacked by torpedo planes and bombers. Hangars and airfields were bombed and machine gunned. Fuel tanks and military installations were destroyed. The Japanese planes were able to return to their carriers and make repeated attacks on the Ameri-

can base. The news staggered the world and jolted the American people out of their isolationism and complacency. Then Japan declared war. The whole procedure was a repetition of the Japanese attack on Port Arthur in 1904.

Censorship concealed the extent of American naval and military losses for a time, but when Sec-



Courtesy of The New York Times

AMERICA'S HAWAIIAN STRONGHOLD

retary of the Navy Frank Knox returned to the United States on December 14, after a flight to Hawaii, it became clear that naval losses were severe. They included: the battleship *Arizona* (32,600 tons) sunk, the battleship *Oklahoma* (29,000 tons) capsized, the target ship *Utah* (19,000 tons) sunk, the destroyers *Shaw*, *Downes*, and *Cassin* (all 1,500 tons) sunk, and the minelayer *Oglala* (4,200 tons) sunk. Other vessels suffered damage. Losses in planes, hangars, and military equipment were heavy. The surprise at Pearl Harbor caused a shakeup in the army and navy commands in Hawaii.

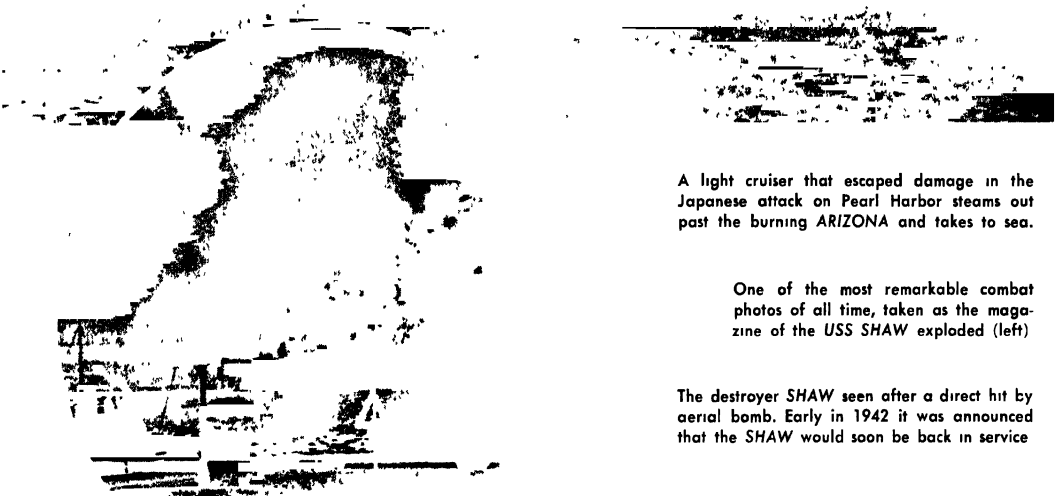
A presidential committee headed by Justice Owen Roberts of the U.S. Supreme Court was appointed to investigate the conditions under which the surprise attack on Pearl Harbor took place. Rear Adm. Husband E. Kimmel, Commander-in-Chief of the U.S. Fleet (and active commander of the Pacific Fleet) was replaced by Rear Adm. Chester V. Nimitz, Chief of the Bureau of Navigation. Lieut. Gen. Walter C. Short, commander of the Hawaiian Department of the U.S.A., was replaced by Lieut. Gen. Delos C. Emmons, commander of the Air Force Combat Command, Bolling Field. Maj. Gen. Frederick Martin, commander of the U.S. Army Air Force at Hawaii, was replaced by Brig. Gen. C. L. Tinker of the 3rd Interceptor Command, Drew Field. On December 20, Adm. Ernest King, who had been serving as commander of the Atlantic Fleet, was named Commander-in-Chief of the entire fleet, including the Pacific Fleet.

Vast Extension of the Conflict. The Japanese declaration of war of December 8 on the United States and Britain brought in its wake a tremendous extension of the conflict. In quick succession, one after another, states exchanged declarations of war upon each other. Germany and Italy declared war on the United States on December 11. By that time the nations of the world had ranged themselves as shown in the table at the top of page 751.

Japan's Far Flung Offensive in the Pacific. The treacherous, but bold and carefully prepared Japanese stroke at Pearl Harbor was timed to coincide with a vast series of blows designed to secure Japanese control of Far Eastern waters. The extent of these



A light cruiser that escaped damage in the Japanese attack on Pearl Harbor steams out past the burning ARIZONA and takes to sea.

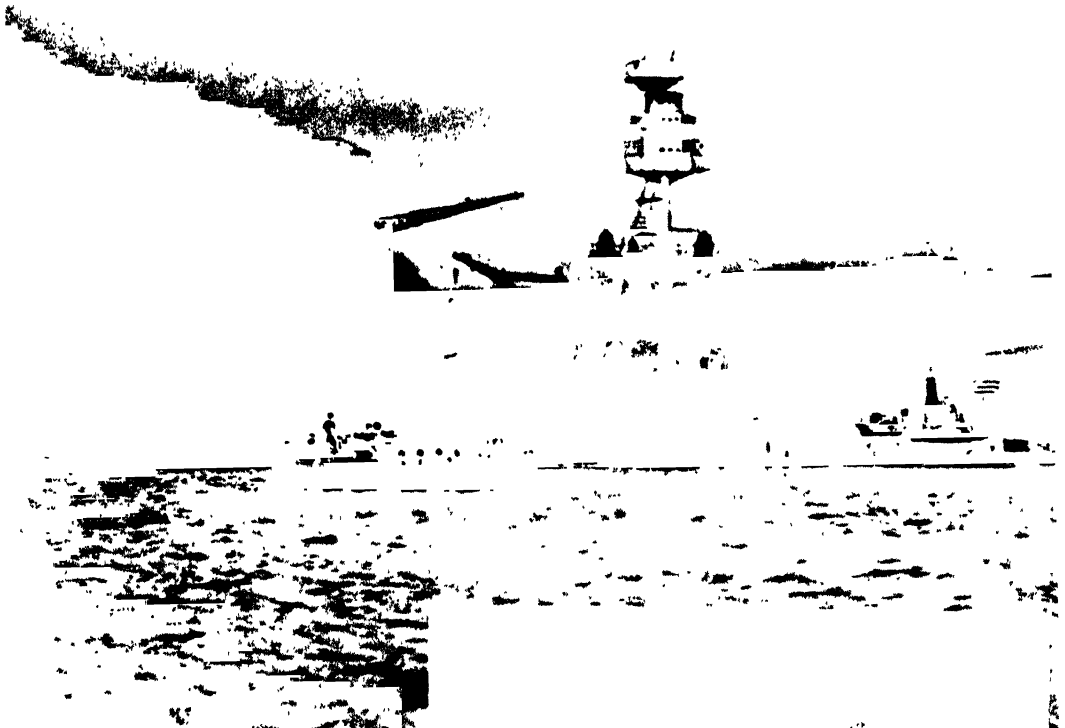
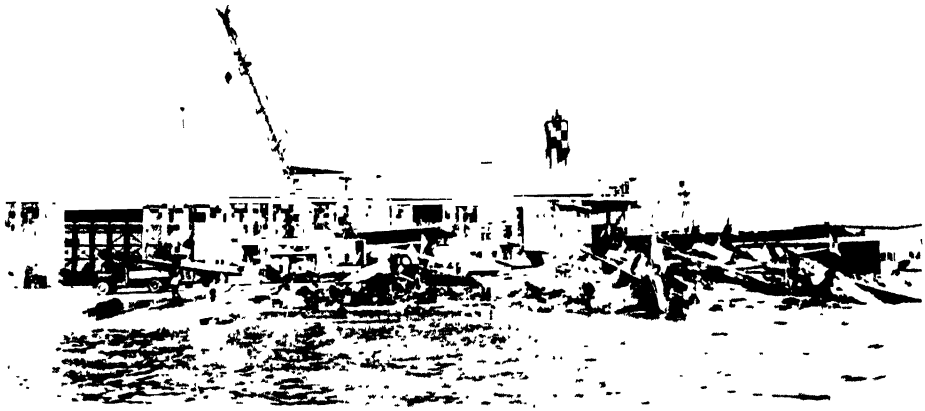


One of the most remarkable combat photos of all time, taken as the magazine of the USS SHAW exploded (left)

The destroyer SHAW seen after a direct hit by aerial bomb. Early in 1942 it was announced that the SHAW would soon be back in service

Official U S Navy Photographs





Official U S Navy Photographs

Patrol planes of the Catalina type (PBY)
wrecked on Ford Island at Pearl Harbor.

USS ARIZONA at the height of the fire which
made the battleship a total loss.

Wreckage of the USS ARIZONA lying in the
mud at Pearl Harbor after the attack.



Powers Against the Axis		Axis Powers
Australia	Haiti	Albania
Belgium*	Honduras	Bulgaria
Canada	Luxemburg*	Croatia
Costa Rica	Netherlands*	Finland
Cuba	New Zealand	Germany
Czechoslovakia*	Nicaragua	Hungary
Dominican Republic	Norway*	Italy
El Salvador	Panama	Japan
Ethiopia	Poland*	Manchoukuo
Free France*	South Africa	Slovakia
United Kingdom	Soviet Union	
Greece*	United States	
Guatemala	Yugoslavia*	

* Governments in exile. Not all the countries on one side were at war with all the countries on the other side. Russia, unique among the great powers fighting the Axis, did not declare war on Japan.

COMPARATIVE TABLE OF ALLIED AND AXIS NAVIES*

Country	Battleships	Carriers	Cruisers	Destroyers	Submarines
U.S.	16	7	37	171	113
Britain	14	7	62	205	50
Russia	3?	1	9?	60?	140?
Netherlands	0	0	3	8	15
Germany	3?	1?	9	45	130
Italy	5?	0	16	90	80
Japan	10?	9?	44	126	70

* December, 1941; includes losses to December 14.

movements indicated that plans had been prepared for weeks if not for months in advance. Hong Kong, the nearest British outpost, was immediately attacked. Japanese troops took over the International Settlement in Shanghai. Attacks were delivered by sea and air forces at Guam, Wake, Midway, and the Philippines. A large-scale Japanese landing took place on British Malaya and the invasion of Thailand was begun. Japanese staff work and fifth column technique was shown to be painfully effective as initial successes followed the assumption of these widespread attacks.

Japanese Grand Strategy. The grand objective of all these Japanese attacks was to render Allied sea power impotent in the Pacific by capturing the advanced American naval bases at Manila and Olongapo, and the British base at Singapore. If these bases were rendered unsafe for British and American ships, there could be no effective barrier against the ultimate conquest of the Dutch East Indies, Burma, and the Philippines. China would be isolated and the supplies of war materials so necessary to the continued resistance of her armies would be stopped. To accomplish this great task Japan had the third largest naval force in the world, a large veteran army, and an air force of unknown size whose effectiveness was to provide one of the major surprises of the war. Against her was the lack of fundamental war materials and natural resources. Experts conceded that she might possess, even after more than four years of war against China, sufficient oil, rubber, and other war resources to last for one or at most two years. She had to win quickly or not at all.

In the way of her attainment of these objectives was a small American Asiatic Fleet based on Manila and commanded by Rear Adm. Thomas C. Hart, and a Far Eastern American Army in the Philippines consisting of some 125,000 American and Philippine troops commanded by Lieut. Gen. Douglas A. MacArthur. Though not fully equipped for modern war and not completely trained these troops soon demonstrated high military qualities. The Dutch East Indies had a small army under Lieut. Gen. Hein ter Poorten, a small but efficient navy and air force. Guarding the great British naval base at Singapore was a force of Imperial troops estimated at 125,000 men. Unfortunately the British

Eastern Command was lacking in modern aircraft and anti-aircraft equipment. Singapore was well-defended against an attack from the sea, but not so well protected against assault from the land. Two British capital ships were reported in this base at the outset of war. The British defense of Malaya and Singapore was entrusted to Air Marshal Robert Brooke-Popham. Commanding the Empire troops under him on Malaya was Maj. Gen. A. E. Percival.

Japanese Campaign in Malaya (December 8-31). Despite the concern of Americans in the Japanese landings which took place on December 10 on the Philippine islands, as well as repeated attacks on Midway and Wake islands (Guam fell on December 12), the most serious threat to the Allied position in the Far East was to be found in the campaign in Malaya. Hong Kong, which held out until December 25, was impossible to defend, but the British had been planning for an attack against Singapore for some time. Japanese forces from French Indo-China swept into Thailand on December 8 almost without resistance. Simultaneously Japanese landing parties were thrown ashore at Singora and Patani near the Malayan frontier. Two divisions were estimated to have landed unopposed and advanced rapidly toward Kota Bharu where they captured the airfield on December 10. Since transports and warships were concentrated in this area to ensure the flow of Japanese reinforcements, British naval forces at Singapore moved out to intercept them.

Two British capital ships, the *Prince of Wales* (35,000 tons) and the *Repulse* (a 32,000-ton battle cruiser), commanded by Adm. Sir Thomas Phillips left Singapore without air support, expecting to encounter Japanese battleships. They were observed by Japanese patrol planes and attacked at 11:10 a.m. on December 9, by flights of Japanese bombers. Due perhaps to fundamental lack of coordination between the British commands, or perhaps on account of professional pride, Admiral Phillips did not radio for air support until 11:45 a.m. Before British land-based pursuit planes could arrive at the scene of action (about 150 miles north of Singapore) the *Prince of Wales* and *Repulse* were subjected to repeated torpedo plane and bombing attacks. In less than two hours Japanese pilots had done what no other air force had ever accomplished: they sank two capital ships. Fortunately a large part of the crew of both vessels were rescued. This was the greatest British naval loss of the war. It altered the naval situation in the Far East profoundly and adversely. Combined with the effectiveness of Japanese air raids on Hawaii and the Philippines it made a revision of Allied opinion about Japanese military and naval aviation necessary.

Rapid advances by specially trained and equipped troops brought Kedah province into Japanese hands by December 20. The British garrison evacuated Penang, the island naval base on the western shore of Malaya, without fighting on December 22. Action on the Malay front diminished as the British withdrew to a defensive position on December 23, along the Krian River in the northern Kelantan province and to Kuala Krai in Trengganu.

The progress of the Japanese invasion of Malaya (100 miles in two weeks) gave rise to widespread criticism of the British command in the Far East. Civilians and experts alike compared the resistance of Hong Kong (16 days) to the surrender of Penang virtually without firing a shot. They pointed to the failure of the retreating British forces to destroy stocks of food, rubber, and other materials valuable to the Japanese.



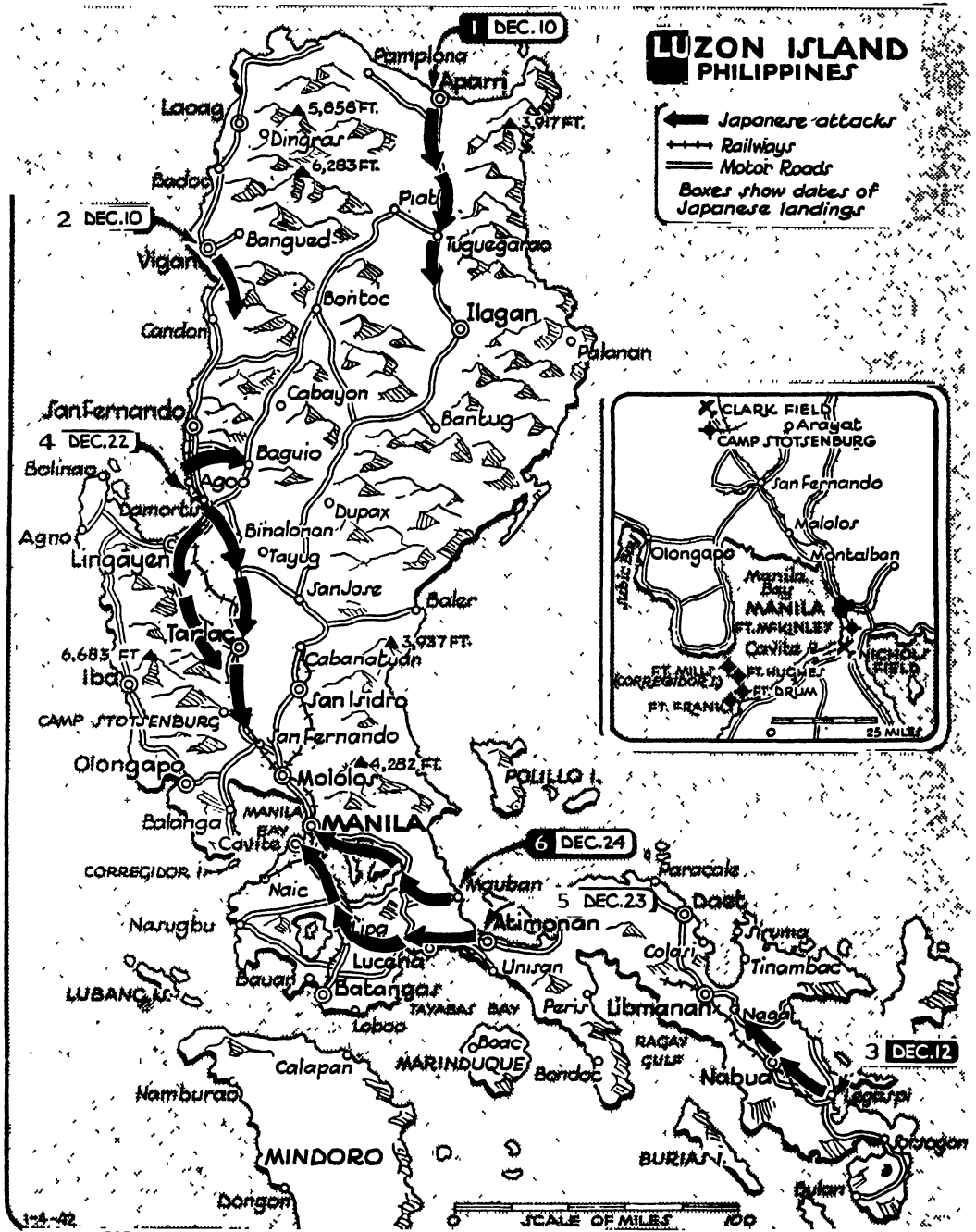
JAPANESE ADVANCE DURING DECEMBER, 1941

Criticism of the British command in the Far East reached a new peak after the fall of Kuching, capital of British Sarawak, on December 26. It led to an abrupt replacement of Air Marshal Brooke-Popham by Lieut. Gen. Sir Henry Pownall, former Vice Chief of the Imperial General Staff. Lieut. Gen. D. K. McLeod was removed from the Burma command and replaced by Lieut. Gen. T. J. Hutton, former chief of staff to General Wavell.

The Japanese forces assumed the offensive in Malaya on December 29 and captured the tin center of Ipoh. Though the Japanese invaders were

still some 200 miles from Singapore at the end of the year, grave concern was felt for its safety. It seemed ironical that in the first three weeks of the war the sharpest blows dealt the Japanese came from the Dutch navy and air force which averaged nearly a Japanese ship a day.

Conquest of Guam and Wake Islands (Dec. 10-24). Japanese attacks on Guam, Wake, and Midway Islands followed almost immediately after the surprise bombing of Pearl Harbor. Protected by small garrisons of naval ratings and marines, these islands were valuable intermediate air bases on the trans-



Courtesy of The New York Times

THE PHILIPPINE CAMPAIGN, DEC. 10-31, 1941

Pacific route. Congress had repeatedly refused to fortify these islands for fear of antagonizing Japan. They could not be adequately defended and were the first American possessions to fall into Japanese hands.

After repeated air raids Japanese troops were landed on Guam on December 10 and in two days fighting reduced the island's small garrison. Wake Island put up a more prolonged resistance. It was defended by a marine garrison of 400 men under

Major James P. Devereux. A Japanese cruiser and a destroyer were sunk by its guns on December 13. Its small force of pursuit planes and anti-aircraft equipment was kept in action until only two planes and three guns were in condition to fight. Even then the garrison sank two more destroyers and took its toll of enemy planes and troops. All radio contact with the island was broken on December 24, and the island was considered lost. The last message received from the Wake garrison was in the

best tradition of the Marine corps. It read: "The issue is still in doubt."

Initial Stage of the Philippine Campaign (Dec. 10-21). Japanese bombing attacks on American flying fields, army camps, and naval bases preceded the landing of troops on the island of Luzon. Shore-based aircraft operating from Japanese island bases rained destruction over a wide area. Their main objective in these raids was to use up and destroy American planes, disrupt supply services, and disorganize military plans. Then, on December 10, Japanese naval units and transports appeared off northern Luzon and landed troops at Aparri and Vigan. Despite marked inferiority in numbers the United States Army planes made effective attacks. One four-motor bomber piloted by Captain Colin Kelly sank the Japanese battleship *Haruna* (29,000 tons) and other planes seriously damaged another battleship of *Kongo* class. Several transports were sunk or badly damaged. Despite these losses the Japanese forces made good their foothold on northern Luzon and soon improvised landing fields. On December 12 a similar landing was made in southern Luzon at Legaspi, and an attempted landing was repulsed in the Gulf of Lingayen. Eight days later another Japanese landing was made at Davao on the island of Mindanao.

Main Japanese Campaign for Manila (Dec. 21-31). The widespread Japanese landings described above were diversions for the main Japanese attacks which were launched in the Gulf of Lingayen on December 21, and in the Lamón Bay region from December 22-28. The trial landing of the Japanese in the Lingayen area which was "repulsed" on December 11 was probably intended to feel out the defenses. A fleet of 80 transports convoyed by naval vessels and aircraft appeared in Lingayen Gulf early in the morning of December 21, and although attempted landings were repulsed at two points with heavy losses, a force of from six to eight divisions was landed at other points. These forces soon made contact with Japanese patrols which had worked their way down the beaches from Vigan. Japanese tanks and artillery appeared on the front and operations on a considerable scale developed. While this battle was in progress other large-scale Japanese landings took place at Atimonan on December 23, and Mauban on December 24. The defense of Manila was then threatened from north and south.

American and Philippine troops in both theaters put up a stout delaying action. Japanese forces from Lingayen reached Baguio, the summer capital of the island, on December 24, and Binalonan on December 25. Enemy forces from Aparri reached Tuguegarao the same day. A constant flow of reinforcements reached the Japanese troops until it was estimated that 200,000 men were on Luzon by December 27.

Manila Declared an Open City. Japanese air raids which at first were limited to military targets on the Philippines soon were directed at Manila. The absence of suitable bomb shelters and the inflammable character of the old "walled city" made these attacks costly in terms of life and property. In order to spare the civilian population from further losses, all military establishments were withdrawn from the city on December 26, and it was declared an open city in keeping with the Hague convention of 1907. But the air attacks continued with unrelenting intensity. The Japanese high command offered cessation of air raids on condition that all Philippine troops in the field surrender. As military operations steadily went against the defenders President Roosevelt, on December 29,

pledged the entire resources of the United States to redeem the liberty and independence of the Philippine people.

The year ended with heavy Japanese attacks in the north and south. The official communiqué of December 31 placed the line of resistance in the south at Dolores some 30 miles from Manila, and at Zaragoza 65 miles north of Manila. The communiqué admitted that enemy dive bombers practically controlled the roads, that the Japanese were employing "great quantities of tanks and armored units," and that the American lines were being pushed back. The situation on the southern front seemed especially critical on December 31, and Manila seemed doomed to fall into Japanese hands.

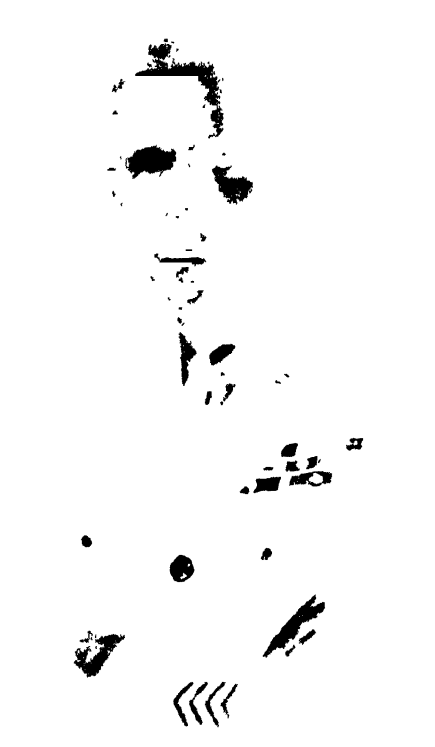
Summary of the Far Eastern War. Japan won all the initial battles of the war in the Pacific. Striking without warning after months of careful preparation, masked by diplomatic overtures for peace, utilizing French bases in Indo-China acquired from a craven government in Vichy, she surprised the whole world with the savageness of her attack, the quality of her war equipment, and the far-reaching character of her plans of conquest. By the end of the year, it was clear that she aimed at the encirclement of Singapore. After driving American forces from the Philippines, the conquest of British and Dutch areas in the East Indies would enable her to surround Singapore with a ring of hostile air bases. If her direct assault on Singapore from the land failed, she would then be in a position to neutralize this great naval base by the use of shore-based aircraft.

Since the war in the Pacific could not be separated from the great war against Italy and Germany, it was necessary for the Allies to coordinate their Pacific strategy to the grand strategy of a war against the Axis. It was apparent at the end of January that the Allies had learned some of the lessons of previous adversity. They were involved in a series of conferences to promote unity of the war effort.

Planning the War Against the Axis. Throughout the summer and fall of 1941 a high degree of cooperation was developed between Britain, China, and the Dutch East Indies. During the last week in December a large number of conferences took place between the officials of the powers fighting the Axis which aimed at coordinating the war effort for 1942-43. General Wavell had a series of conferences in Chungking with General Chiang Kai-shek. British Foreign Minister Anthony Eden had five conferences with Stalin in Moscow; and most important and surprising of all, Prime Minister Churchill and 80 of his military and naval advisers arrived in Washington on December 22 for joint British-American-Canadian conferences on the war. It was announced that no single supreme command was contemplated. Each belligerent was to assume primary responsibility for one zone of operations and coordinate its effort to the whole program. In a tradition-breaking appearance before the Congress of the United States on December 26, Mr. Churchill declared that 1942 would be a year of preparation for a vigorous Allied offensive in 1943.

See the separate articles on each country and territory under *History*; *REFUGEES*; *WAR RELIEF*. For technical and tactical developments, see *AERONAUTICS*; *MILITARY PROGRESS*; *NAVAL PROGRESS*; also, *BOMBS*; *CHEMISTRY*, *INDUSTRIAL* under *Explosives*. For books on the war, see *LITERATURE*, *ENGLISH* AND *AMERICAN*. Compare the articles listed under *NATIONAL DEFENSE* for war activities and war effects in many fields.

H. A. DEWEERD.



U S Army Signal Corps and I N P

GENERAL GEORGE C MARSHALL, U.S Chief of Staff



GENERAL DOUGLAS MacARTHUR, Commanding General in the Far East

ADMIRAL ERNEST J. KING, Commander-in-Chief of Combined U.S. Fleet



ADMIRAL HAROLD R. STARK, Chief of Naval Operations

Official U S Navy Photograph



WPA. See **WORK PROJECTS ADMINISTRATION.**

WPB. See **WAR PRODUCTION BOARD.**

WRESTLING. Wrestling, with the exception of the college and amateur variety, was almost defunct in 1941. The professional mammoths had ruined their own game with their persistent hippodroming and found small crowds of curious only in the outlying towns to which the news of their histrionics had not seeped through. In the cities they were without spectators.

The college and amateur game thrived, with many colleges and clubs adopting the sport because of its muscle-strengthening qualities. Four New Yorkers surprised by winning titles in the national A.A.U. meet, and for the second year in a row New York's West Side Y.M.C.A. took the team title. The individual winners were Henry Wittenberg, a holdover in the 174 pound class, Gilbert Frei at 191 pounds, Louis Maschi in the heavyweight ranks, and Chris Soukas at 145 pounds. Herbert Farrell and Homer Faucett of Indiana, Joe McDaniels and Harold Byrd of Oklahoma, and Douglas Lee of Baltimore were the other winners. In college competition, the Jennings brothers of Michigan State, Merel and Burl, won two titles with the University of Oklahoma taking four titles because of the excellence of Al Whitehurst, a holdover, David Arndt, Earl Van Bebber and Virgil Smith. Richard Dibattista of the University of Pennsylvania and Leonard Levy of the University of Minnesota accounted for the other two divisions.

WÜRTTEMBERG. See **GERMANY** under *Area and Population.*

WYOMING. A mountain State. Area: 97,914 sq. mi., including 408 sq. mi. of inland water. Population: (1940 census) 250,742. The urban population comprises 37.3 per cent of the total (U.S. average, 56.5 per cent); nonwhite population, 1.6 per cent (U.S. average, 10.2); elderly (65 years and over), 4.7 per cent. Wyoming ranks eighth among the States in area, 47th in population, and 47th in density, with an average of 2.6 persons per square mile. The largest city and capital is Cheyenne with 22,474 inhabitants. There are 23 counties and four cities of more than 10,000 inhabitants (see article on **POPULATION** in 1940 YEAR BOOK). For statistics on births, deaths, accidents, et cetera, see **VITAL STATISTICS.**

Education. According to Esther L. Anderson, Superintendent of Public Instruction, there were 55,527 pupils enrolled in the public schools of Wyoming during the school year 1940-41, 39,617 in elementary schools and 15,910 in secondary schools. Teachers numbered 2,697 and received an annual average salary of \$1,250. Total expenditures for the year were \$6,145,728.36. For higher education, see *Wyoming* in the table of **UNIVERSITIES.**

Transportation. State highway mileage in 1939, including streets under State control, totaled 3,867, of which 3,524 miles were surfaced. Motor vehicles registered in 1940 (including trailers and motorcycles) numbered 88,166; 66,613 were private and commercial automobiles, 145 busses, and 18,899 trucks and tractor trucks. Gross motor-fuel consumption was 70,753,000 gallons. Net motor-fuel tax receipts were \$2,774,000, the rate being four cents per gallon (Dec. 31, 1940). State motor-vehicle receipts (from registrations, licenses, fines, etc.) were \$603,000.

Railways of all classes extended 2,010 miles

(Dec. 31, 1939), .85 per cent of the total mileage in the United States. Class I steam railways (1,854 miles) reported 3,691,764 tons of revenue freight originating in Wyoming in 1940 and 1,455,451 tons terminating in Wyoming. There are 32 airports and landing fields in the State (15 lighted fields). On July 1, 1941, according to the Civil Aeronautics Authority, there were 85 civil aircraft in the State and 358 airline transport, commercial, and private pilots (301 private).

Agriculture. Acreage harvested in principal crops in 1941 totaled 1,759,500, as compared with 1,595,400 acres in 1940. According to the latest census, there are 15,018 farms, valued at \$158,971,294, averaging 1,866.2 acres each. Farm population numbered 72,723 or 29.0 per cent of the total. The leading crop was hay, worth \$9,612,000 and producing 1,342,000 tons.

Manufacturing. According to the latest census (for the year 1939) the total value of manufactured products was \$45,423,103; 310 establishments employed 3,484 wage earners who received \$4,757,094 in wages for the year.

Mineral Production. The total value of minerals produced in 1939, according to the U.S. Bureau of Mines, was \$39,425,468 or .93 per cent of the total for the United States. The chief items were: Petroleum, 21,454,000 barrels valued at \$18,150,000 (25,683,000 barrels in 1940); coal, 5,383,000 short tons, \$10,766,000 (5,748,000 short tons in 1940).

Trade. According to the 1940 census there were 397 wholesale establishments in Wyoming, employing 1,210 persons, reporting net sales for 1939 of \$37,031,000 and annual pay roll of \$1,671,000. There were 4,113 retail stores with 8,938 employees, reporting sales of \$100,233,000 and pay roll of \$9,346,000. Service establishments numbered 1,199, employing 1,329 persons for \$1,073,000 per year, and reporting a business volume amounting to \$4,467,000. The leading business center of the State is Cheyenne which reported wholesale sales of \$9,059,000 and retail sales of \$13,816,000.

Social Security and Relief. In the calendar year 1940 the total cost of assistance to needy persons in Wyoming was \$4,708,000. Under the Social Security program, financed by Federal funds matching State grants, 3,523 elderly persons were receiving (as of June, 1941) an average monthly old-age pension of \$23.99 (U.S. average pension, \$21.08); 1,968 dependent children in 772 families received average monthly payments of \$32.89 per family (U.S. average, \$32.73); and 150 blind persons received \$26.93 per month (U.S. average, \$25.58). General relief cases, which are supported by State and local funds only, numbered 870 and received \$15.88 per case (average payment for 41 States, \$22.68).

The number of persons employed throughout the State in June, 1941, under the various Federal work programs was as follows (with total earnings for the month in parentheses): CCC, 372 (\$25,000); NYA student work program, 811 (\$6,000); NYA out-of-school work program, 901 (\$17,000); WPA, 2,242 (139,000); other Federal emergency projects, 27 (\$4,000); regular Federal construction projects, 1,870 (\$213,000). The Farm Security Administration certified subsistence payments totaling \$6,000 for the month to 263 cases.

Legislature. The Legislature convenes in regular session on the second Tuesday of January in odd years. It is composed of 27 Senators (11 Democrats and 16 Republicans in 1941) and 56 Representatives (28 Democrats and 28 Republicans).

Finances. Total tax collections in Wyoming for the fiscal year ending in September, 1940, were \$8,160,000. Total sales taxes amounted to \$5,044,000, including motor fuel, \$2,756,000, general sales, \$1,961,000. Taxes on specific businesses ran to \$533,000, general and selective property, \$8,160,000, unemployment compensation, \$1,191,000. Cost payments for the operation of general government totaled \$9,359,000 in 1939, the latest year available. (Revenues for the general government for that year were \$14,056,000.) Cost of operation per capita was \$37.74. Total gross debt outstanding in 1941 was \$3,558,000, as compared with \$5,597,000 in 1932.

Officers and Judiciary. The Governor is Nels Smith (Rep.), inaugurated in January, 1939, for a four-year term; Secretary of State, Lester C. Hunt; Attorney General, Ewing T. Kerr; State Treasurer, Mart T. Christensen; State Auditor, William Jack. Chief Justice of the Wyoming Supreme Court is William A. Riner; there are two associate members elected by popular vote for eight-year terms.

X-RAYS. See ELECTRICAL INDUSTRIES; PHOTOGRAPHY under *Radiography*; PHYSICS.

YACHTING. Although yachting competition was not curtailed during 1941 in United States waters, some of the zest for the season was lost with the necessary canceling of the King's Cup Race and Astor Cup Race, while the New York Yacht Club failed to hold its annual cruise. The longest race of the year was the Storm Trysail Club's 422-mile run from New London, Conn., and up Chesapeake Bay to Hampton, Va. It was won by James H. Grove's sloop *Blitzen*, in the larger class; Harvey Conover's sloop *Revonoc* was the first to report back in the smaller class. In the annual distance race of the Stamford Club around Vineyard lightship and back, De Coursey Fales's schooner *Niña* was the victor. The American Club cruise consisted of four runs and a race around Block Island. *Niña* took the first run, Harkness Edwards's yawl *Wakiva* the second, and P. Mackay Sturges's sloop *Sapphire* two of them.

The 11th Annual Stratford Shoal frolic went to John White's sloop *Babe*; the New York Athletic Club's Block Island race to George Granbery's sloop *Anita*, the sixth time in eleven years; and the New Rochelle-Stratford final to Northport, to the *Windward*. George Fleitz's *Wench* won the Star Class world series. Lois MacIntyre of the Riverside Club was crowned new women's national champion as she took both the Syce Cup on Long Island Sound, and the Mrs. Charles Francis Adams Cup.

YANAON. See FRENCH INDIA.

YAP ISLAND. See JAPANESE PACIFIC ISLANDS.

YELLOW FEVER. See PUBLIC HEALTH SERVICE.

YEMEN. See under ARABIA.

YOUTH MOVEMENT. Heightening tension in international affairs and increasing emphasis upon measures for the national defense brought many shifts in the programs of organizations of youth and of agencies concerned with young people, both governmental and nongovernmental.

Accelerated employment in defense industries, combined with enlistments in the military and naval services and the induction of young men into the Army under the Selective Service Act, reduced somewhat the number of unemployed youth. Consequently during the year the Civilian Conservation Corps (q.v.) was substantially diminished

from its former size, and a considerable reduction in the program of the National Youth Administration (q.v.) was effected by order of the Bureau of the Budget in November. Late in the year the President let it be known that he favored the consolidation of the CCC and the NYA to form a single national youth agency, and legislation to that effect was drafted for presentation to Congress. Such a step had been previously recommended by the American Youth Commission of the American Council on Education (see SOCIETIES AND ASSOCIATIONS).

Of great significance in promoting the entrance of youth and adults into employment in defense industries were the four programs of defense training operated in selected public schools throughout the country through the agency of the U.S. Office of Education (q.v.). These were respectively the regular defense training program in city vocational schools, a special program in colleges of engineering, a special program for rural youth and others similarly situated, and a program of related training for youth employed on the out-of-school work projects of the NYA. Substantial appropriations for these purposes were made by the Congress, and responsibility for coordinating the whole program of defense training was centered in the Division of Labor Supply and Training of the Office of Production Management.

The Public Health Service (q.v.), the Children's Bureau (q.v.), the Extension Service of the Department of Agriculture, and the Bureau of Employment Security in the Social Security Board (q.v.) carried on their several activities related to the welfare of young persons. There was generally increased attention to the improvement of dietary habits as a prime factor in enhancing the national vigor and strength, especially of children and youth. This was furthered by a National Nutrition Conference held at Washington in April under the auspices of the Federal Security Administration. Important in their bearings on this subject are the food-stamp plan for relief families, and the expanding prevalence of well-balanced free lunches for school children, resulting largely from the distribution of suitable foodstuffs by the Surplus Marketing Administration (see AGRICULTURE, U.S. DEPARTMENT OF).

During 1941 there was much new activity looking toward the social welfare of the young men in the fighting forces and in defense industries, as well as of the children of families recently migrated into congested centers of military or industrial activity. One of these activities was the creation of the Office of Defense Health and Welfare Services (q.v.). The Office of Civilian Defense (q.v.) directed by Fiorello H. LaGuardia, with Mrs. Franklin D. Roosevelt as assistant director in charge of voluntary participation, includes a division of youth participation.

Among the nongovernmental agencies, the principal development of the year was the progress of the league of seven great agencies known as the United Service Organizations, formed for the purpose of promoting wholesome recreation and social activities for the young men of the military and naval services. The American Youth Congress continued through the eighth year of its existence its efforts to lead public opinion among American young people, but its influence, never great, declined somewhat because it lost the patronage of Mrs. Roosevelt through its opposition to the policy of the national administration with respect to foreign relations and defense. After midyear and the Nazi attack on Russia, however, the organization

supported the national policies. Speaking of the American Youth Congress in a notable address on the youth movement in the United States at the annual convention of the American Association of Teachers Colleges, Albert Lindsay Rowland said, "There seems to be evidence that it has so far employed approved democratic methods in its procedures and is loyal to the principles of American democracy." (For the above, see SOCIETIES AND ASSOCIATIONS.)

American Youth Commission. This nongovernmental agency of research and publication, under the chairmanship of Owen D. Young, operating under the auspices of the American Council on Education, carried on through the sixth year of its program. During the year it published some nine staff reports, three of which dealt respectively with *Youth Work Programs*, *Work Camps for College Students*, and *Work Camps for High School Youth*. Three other staff reports dealt with extensive studies of Negro youth in various parts of the country. Typical of these was the volume, *Growing Up in the Black Belt*. Further notable reports treated respectively the use of leisure time by youth, the preparation of youth for marriage and family living, and the scope of youth-serving organizations.

During the year the Commission also completed and adopted its general comprehensive report based on some 27 published staff studies and containing its full recommendations derived from six years of research and deliberation, under the title *Youth and the Future*. Completed after the beginning of the war and released in January, 1942, this volume is the most significant study of American youth problems to be had, and bids fair to influence the quality of American citizenship and the strength of the national culture for many decades. Of special interest are the Commission's statements regarding the war effort and regarding the problems of the inevitable post-war epoch.

Looking forward into the war period, the Commission cooperated with Marshall Field, in his capacity as Chairman of the National Citizens' Committee of the White House Conference on Children in a Democracy, in forming a joint body of ten members known as the Emergency Cooperating Committee for Children and Youth. This agency came into existence at the end of the year on account of the recognition that the health and vital interests of children and youth may suffer unduly during the war years unless protective measures are taken, and that such measures are essential to the national security. Its chairman is Floyd W. Reeves, Director of the American Youth Commission, whose office is at 744 Jackson Place, Washington, D.C. See EDUCATION under *Youth Employment*. Compare JUVENILE DELINQUENCY.

M. M. CHAMBERS.

YUKON. A northwestern territory of Canada. Area, 207,067 sq. mi. (inc. 1,730 sq. mi. of fresh water.) Population (1941 census), 4,687. Chief towns: Dawson (capital), and Whitehorse. The principal industry is mining, the output for 1939 being valued at \$4,961,321, of which gold (87,745 fine oz.) accounted for \$3,171,192, silver (3,830,864 fine oz.) \$1,551,040, and lead (7,544,632 lb.) \$239,089. Tungsten and coal also are mined. Balsam, spruce (white and black), poplar, cottonwood, and birch are the chief trees of the forests. Fur output (1938-39): 77,475 pelts valued at \$267,721. Communications (1940): 58 miles of railway, 324 miles of wagon roads, 978 miles of sled roads and trails, and several landing fields for aircraft. The Yukon River (1,437 miles long) is an

important means of communication from the coast to the interior. Finance (1938): \$213,712 for revenue and \$212,597 for expenditure. A controller and a territorial council (of 3 elected members) administer the territory. The Yukon elects a member to the House of Commons of the Federal Parliament at Ottawa. Controller, George A. Jeckell (appointed June 30, 1922). See CANADA under *History*.

YUGOSLAVIA. A kingdom in the Balkans; occupied by German and Italian military forces in April, 1941, and subsequently partially dismembered. Capital, Belgrade (Beograd). Sovereign, King Peter II, who succeeded to the throne as a minor on Oct. 9, 1934, and assumed full ruling powers Mar. 27, 1941.

Area and Population. The area of Yugoslavia on Jan. 1, 1941, was 95,576 square miles. Estimated population, 15,703,000 on Dec. 31, 1939 (13,934,038 at 1931 census). Four-fifths of the inhabitants were classified as rural. The autonomous Banovina (Province) of Croatia comprised 25,634 square miles and 4,403,199 inhabitants (Croatsians, 3,325,830). The 1931 census populations of the chief cities were: Belgrade, 266,849; Zagreb, capital of Croatia, 185,581; Subotica, 100,058; Ljubljana, capital of Slovenia, 79,056; Sarajevo, 78,173; Skopljje, 64,737; Novi Sad, 63,985.

Religion and Education. According to the 1931 census, there were 6,785,501 members of the Serbian Orthodox Church (48.70 per cent of the total population), 5,217,910 Roman Catholics (37.45 per cent), 1,561,166 Moslems (11.2 per cent), 231,169 Protestants (1.66 per cent), 68,405 Jews (0.49 per cent), and 44,671 Greek Catholics (0.32 per cent). Primary education was compulsory and, in government schools, free. School enrollment in 1938-39 was: Elementary, 1,474,224; secondary, 177,034; university, 16,969.

Production. Four-fifths of the population normally engages in agriculture, and about 80 per cent of the cultivated area is devoted to cereals. Yields of the chief cereal crops in 1940 were (in metric tons): Corn, about 5,000,000; wheat, 1,900,000; barley, 200,000; rye, 200,000. Other important crops were (metric tons): Beet sugar, 108,000 (1939); tobacco, 15,400 (1939); hemp, 53,500 (1939); potatoes, 17,016,000 (1938). Plums and other fruit are widely grown. Livestock in 1939 included 4,224,595 cattle, 10,153,798 sheep, 1,273,359 horses, 19,475 mules, 1,866,141 goats, and 3,503,454 swine. Forests produce about 530 M cu. ft. annually in normal times. Mineral output in 1940 was (metric tons): Lignite, 6,888,000; copper, smelter, 43,200; lead, smelter, 32,400; zinc, smelter, 6,000; bauxite, about 150,000; chromite, 60,000; iron ore, 600,000; pig iron, 60,000; manganese ore, 6,000; antimony, 3,350; aluminum, 2,800. There were 3,054 industrial enterprises in 1938 and their employees numbered about 400,000 in 1940. Leading industries include timber, textiles, milling, tanning, cement, leather goods, chemicals, steel, brewing, and sugar refining.

Foreign Trade. The value of merchandise imports in 1940 was 6,018,000,000 dinars (4,756,800,000 in 1939); exports, 6,680,400,000 (5,521,200,000 in 1939). For distribution and character of 1939 trade, see YEAR BOOK for 1940. Also see TRADE, FOREIGN, in this volume.

Finance. Budget expenditure authorized for the 1940-41 fiscal year (ended March 31) was 14,708,200,000 dinars, as against actual expenditures of 12,327,900,000 dinars in 1939-40. Estimated revenue in 1939-40, 12,786,000,000 dinars. Public debt on Mar. 31, 1939, 24,620,000,000 dinars (in-

ternal, 10,420,000,000). The average exchange rate of the dinar was \$0.0227 in 1939, \$0.0225 in 1940.

Transportation. There were 6,591 miles of railway in 1939 (6,000 miles operated by the state). Highways extended 26,534 miles (see **ROADS AND STREETS**). The Danube and other rivers are important traffic arteries. Yugoslav airlines in 1939 carried 12,687 passengers and 84,011 lb. of mail and other matter.

Government. The Constitution of Sept. 3, 1931, proclaimed Yugoslavia a hereditary, constitutional monarchy. It vested executive power in the King, acting through a Ministry appointed by him and not responsible to Parliament. Legislative power was shared by the King and Parliament. There was a Senate of 84 members, half elected and half appointed by the Crown for terms of six years. The Lower Chamber (Skupshchina) of 371 elective members was dissolved Aug. 26, 1939, and new elections were still pending when the German-Italian invasion occurred in 1941. The kingdom was subdivided administratively into nine banovinas (provinces), each under a governor (ban) appointed by the Crown. By a decree of Aug. 26, 1939, the Banovina of Croatia (Hrvatska) obtained full autonomy in all purely provincial matters (see **YEAR BOOK** for 1939, p. 815), and it was agreed that similar powers were to be extended to other parts of the kingdom. Premier at the beginning of 1941, Dragisha Cvetkovich, heading a Cabinet of 10 Serbs, 6 Croats, 1 Slovene, and 1 Bosnian Moslem. The King being still a minor, his powers were exercised by a regency headed by his uncle, Prince Paul.

HISTORY

The explosive situation that developed in Yugoslavia in 1940 as a result of German pressure for Yugoslav adhesion to the Axis (see **YEAR BOOK** for 1940) moved rapidly to a tragic climax in 1941. The Regency and Government yielded to German threats on March 25, only to be overthrown two days later by military leaders enthusiastically supported by the Serb populace. When the new Provisional Government repudiated collaboration with the Axis in favor of neutrality, German armed forces invaded the kingdom on April 6 and crushed all organized resistance within 12 days (see **WORLD WAR** for account of military campaign). King Peter and his new Government were driven into exile and the Yugoslav people entered upon a new period of foreign subjection.

Negotiations with Reich. Early in 1941 Reichsfuehrer Hitler opened his diplomatic drive in the Balkans, designed to extricate Italy from its desperate military position in Albania and North Africa. A "war of nerves" was directed against Yugoslavia and Bulgaria to force them into alliance with the Axis. Once German military forces obtained entrance into Bulgaria and Yugoslavia, it was anticipated that Greece would make peace with Italy rather than face a German military invasion.

Bulgaria on March 1 signed the Tripartite Pact of Sept. 27, 1940, between Germany, Italy, and Japan, and simultaneously permitted German occupation of the entire country. Yugoslavia was now surrounded by Axis troops on all sides except the south. The Belgrade Government's diplomatic and military position was further weakened by growing economic dependence upon Germany and by soaring prices resulting from an acute shortage of foodstuffs and raw materials. As of Jan. 1, 1941, Yugoslavia owed Germany about 1,000,000,000 dinars on their joint compensation trade account,

and this adverse balance had to be paid for in Yugoslav produce at prices fixed by Germany. The cost of living was some 60 per cent higher than in 1939.

Nazi "power diplomacy," which began to be applied in earnest early in February, utilized economic pressure, an alarmist propaganda campaign both within and without Yugoslavia, and such calculated military threats as flights of German planes over Yugoslav territory to reinforce the political demands submitted to the Belgrade authorities. On February 12 Premier Cvetkovich and Foreign Minister Alexander Cincar-Markovich accepted Hitler's invitation to confer with him at Berchtesgaden. At this conference on February 14, Hitler asked Yugoslavia to sign the Axis pact, permit munitions and if necessary German troops to cross Yugoslav territory to attack Greece, immobilize the Yugoslav army during the forthcoming German occupation of Bulgaria, and grant further economic concessions to the Reich in the form of greater foodstuffs exports and a more favorable exchange rate for the German mark. In return Hitler offered Yugoslavia territorial compensation at the expense of Greece and possibly Albania.

Upon his return to Belgrade, Premier Cvetkovich was instructed by Prince Paul to bring opposition leaders into the Cabinet to insure united support during the ensuing negotiations with Germany. The leaders of the opposition Serb Democratic, Radical Nationalist, Socialist, and Agrarian parties, who strongly opposed concessions to Germany, declined the proffered Cabinet posts. They protested against the Government's failure to inform the nation of the nature of Germany's demands. With German pressure increasing, Premier Cvetkovich stalled for time. Trade talks were renewed with the German economic mission in Belgrade. On February 17 the Germans were permitted to assume full control of the big Bor copper mines in Yugoslavia, having replaced the former French owners through a deal with the Vichy Government.

Upon the German occupation of Bulgaria, Germany warned Belgrade that a prompt decision on Hitler's demands was essential. The next day (March 2) Prince Paul conferred secretly in Slovenia with a special German envoy, who presented additional demands. The Government ordered partial mobilization of the army March 4 because of Germany's threatening attitude. On March 6 Prince Paul submitted the German demands to a conference of Cabinet leaders, members of the Regency, and the Army High Command. When five Cabinet Ministers threatened to resign rather than capitulate, Prince Paul again conferred with the German Minister to Belgrade. The German demands were then modified. In their new form, they provided only for a Yugoslav-German non-aggression pact, a declaration of friendship, and economic concessions. The Yugoslav Cabinet reluctantly agreed to this, and Premier Cvetkovich again vainly sought to coax opposition leaders into the Cabinet so that he might go to Germany to sign the non-aggression pact with the backing of all parties.

Meanwhile the British and American Ministers urged Government leaders to resist German pressure and stay neutral (March 7). The Soviet Government offered its diplomatic support of the harassed Belgrade authorities. Berlin then dropped the projected non-aggression pact as insufficient and on March 11 renewed its original demands of February 14. At another Crown Council called by Prince Paul on March 12, three Ministers threatened to resign if the demands were accepted. With a Cabinet collapse impending, Prince Paul sounded out

Vice Premier Vladimir Matchek, leader of the powerful Croat Peasant party, and War Minister Pesich with tentative offers of the Premiership. Both declined to assume responsibility for accepting the German demands. During the ensuing week, Axis pressure on the Government was intensified, while British, Turkish, and Greek diplomatic representatives fought to keep Yugoslavia out of the Axis. At the same time opposition developed rapidly to concessions to Germany in virtually all Serbian segments of the nation. The Croat leaders and some Slovenian spokesmen were said to favor acceptance of the Nazi demands.

As a precaution against a German attack, the Government on March 18 transferred ex-Premier Milan Stoyadinovich from his sanatorium-prison in Bosnia to Greece, where he was turned over to the British for safekeeping. Arrested in April, 1940, for plotting the establishment of a pro-Nazi regime, he was the logical leader for any puppet government the Axis powers might set up in Yugoslavia. The German Minister then presented Hitler's "final demands," insisting that an answer must be made within eight days. Three Ministers resigned at an emergency Cabinet meeting on March 20 and it was not until 27 leading personalities had rejected the proffered posts that two minor politicians were induced to fill them on March 24. Immediately afterward the Cabinet agreed to partial acceptance of the German terms. That same night the Premier and Foreign Minister entrained for Vienna.

Yugoslavia Joins the Axis. At a ceremony in Vienna attended by Reichsfuehrer Hitler, the two Yugoslav representatives on March 25 signed a protocol of adherence to the German-Italian-Japanese alliance identical with those signed previously by Hungary, Rumania, Slovakia, and Bulgaria.

In notes delivered to the Yugoslav Premier at Vienna, the German and Italian Governments pledged that they would "respect the sovereignty and territorial integrity of Yugoslavia at all times." They further stated that "the Axis . . . Governments during this war will not direct a demand to Yugoslavia to permit the march or transportation of troops through the Yugoslav State or territory." As revealed later by the German note of Apr. 6, 1941, the Yugoslav Government also received secret "assurance that within the framework of the new European order Yugoslavia would receive an outlet to the Aegean Sea which . . . would include Yugoslav sovereignty over the town and harbor of Salonika."

The Military Revolt. The Government and Prince Paul capitulated to the Axis demands in the belief that there was small chance of successful military resistance and that any other course would mean the extinction of Yugoslav independence. The Croat Ministers in the Cvetkovich Cabinet all favored a compromise accord with the Reich, since Croatia was indefensible strategically. Moreover the small Croat separatist movement was making headway at the expense of Dr. Matchek's Croat Peasant party. Dr. Matchek and his associates foresaw that resistance to the Axis would jeopardize both their leadership in Croatia and the unity of Yugoslavia.

With the exception of a small pro-Nazi minority, the Serbs of all classes were roused to deep anger by the Government's capitulation. The resentment found vent in a wave of protest demonstrations in Belgrade and throughout most of the provinces on March 26. Serb patriotic organizations, leaders of the Orthodox clergy, students and peasants demanded the resignation of the Cvetkovich Government and threatened armed revolt. There was serious rioting in some districts. Numerous arrests

by the police failed to check the demonstrations.

At this juncture, officers under the command of Gen. Dushan Simovich, chief of the Air Force, carried out the coup d'état that most of Yugoslavia appeared to be eagerly awaiting. Early in the morning of March 27 troops arrested Prince Paul and the members of the Cabinet, and seized control of the capital without meeting resistance. Young King Peter assumed the royal powers, the Regents and the Cvetkovich Government resigned, and General Simovich was designated to form a new Government. Belgrade awoke to find the coup completed and the new Cabinet being organized.

The populace reacted with delirious enthusiasm to a royal manifesto announcing this news. Massed in the central public square, some 40,000 Serbs wildly cheered King Peter, the members of the new Government, and the Greek, British, and American Ministers. They beat up a number of Germans who appeared on the streets, smashed windows in the German and Italian travel agencies, and shouted for war. Similar scenes were enacted throughout most of the country, where the new regime won the immediate support of both the armed forces and the people. The army immediately restored order and began preparations to resist the expected German attack. During the night of March 27 Prince Paul was permitted to leave Belgrade for Athens.

The Simovich Government. On March 28 King Peter was formally invested with the ruling powers in a ceremony at Belgrade Cathedral. Earlier the same day Premier Simovich had announced his new Cabinet, the principal members being: Vice Premier, Vladimir Matchek; Second Vice Premier, Slovdan Jovanovich; Foreign Affairs, Memcilo Nincich, War and Navy, Gen. Bogoljub Ilich; Interior, Srdjan Budisavljevich; Transport, Bogoljub Yevtich; Finance, Juri Shutej; Agriculture, Dr. Branko Chubrilovich.

In the Cabinet were representatives of all the principal racial groups and political parties of the kingdom. However Dr. Matchek and his Croat followers withheld acceptance of the portfolios offered them until they had received assurances that the Serb-Croat accord of Aug. 24, 1939, would not only be respected but extended. At Dr. Matchek's insistence, the Government also granted the long-standing Croat demand for dissolution of the existing Senate and the holding of free, popular elections for a new parliament. Finally, Dr. Matchek was to be named one of three official counselors to the young King.

On the basis of these far-reaching concessions, Dr. Matchek on April 3 accepted the Vice Premiership under General Simovich. He called upon the Croats to support the Government and obey the general mobilization order. This action frustrated one of the principal aims of Axis propaganda—to split the Croats from the Serbs and thus force the Simovich Government to accept the Tripartite Pact and the Cvetkovich policy of collaboration with the Axis. The full Cabinet met in Belgrade on April 4 and approved the general policy followed by the Government in its negotiations with the Axis powers since March 27.

The Break with Germany. While Yugoslavs and Germans feverishly prepared for war, the Italian Government on April 1 made a last-minute effort to avert a collision, which would threaten the Italian armies in Albania with disaster. The Simovich Government, however, refused to budge from its position, outlined in a note to Berlin on April 1. The note declared that Yugoslavia was ready to make any concessions short of sacrifice of its inde-

pendence and territorial integrity to preserve its neutrality. It was ready to cooperate with the Reich economically and to permit German shipments of foodstuffs and raw materials (but no war materials) across Yugoslav territory. Belgrade would respect all existing "public and open" agreements with neighboring countries. It would never declare war on Germany unless attacked, but would resist all unprovoked aggression.

The German reaction to this stand was indicated by the departure of the last of the German Legation staff on April 3. The same night Italy ordered its Legation staff to leave Belgrade immediately. Early the following day the Yugoslav Government designated Belgrade, Zagreb, and Ljubljana as open cities, hoping to save them from destruction by German air attacks. But Belgrade authorities still refused to authorize consultations between the Yugoslav, British, and Greek general staffs for the coordination of their military forces, since such action would violate the kingdom's neutrality. They sought and obtained ineffective diplomatic support from the Soviet Union in the form of a non-aggression pact signed April 5. The Germans meanwhile were completing their military preparations, while making a final effort to wean Croatia away from Belgrade. When this maneuver failed, the German air force initiated the invasion of Yugoslavia on April 6 by bombing Belgrade at dawn.

A few hours later the German Foreign Minister made public in Berlin the text of a note to the Yugoslav Government announcing that the German army had been ordered "to reestablish law and order in this part of Europe . . . by all available military means." Following the precedent established in connection with the German invasions of Norway, Belgium, and the Netherlands, the note stated that "secret documents of the French general staff" which had been "found at La Charité in France after the outbreak of the war" disclosed that Yugoslavia had pursued a policy directed against Germany since the summer of 1939. These alleged documents were said to prove "irrefutably" that the Yugoslav Government discussed with the French as early as Aug. 19, 1939, the sending of an Allied expeditionary force to Salonika; that in the first months of the war Belgrade had given "the most extensive assistance possible to transports for England and France"; that in April, 1940, Yugoslavia sent a liaison officer to General Weygand's headquarters in Syria; and that under the guidance of "a certain clique of conspirators" Yugoslavia had "finally decided to make common cause with Germany's enemies, to place her army at Britain's disposal, and to allow her country to be turned into a base for attack on Germany."

The Military Collapse. Although the Serbs fought with customary bravery, the overwhelmingly superior German air force and armored divisions shattered the ill-equipped Yugoslav armies within 12 days. The central section of Belgrade was pulverized by continuous air attacks on the first day of the invasion, with civilian deaths estimated at upward of 10,000. Other Serb cities shared the same fate while Croat cities were left untouched. Activities of Bulgarian fifth column elements in Serbian Macedonia and the treason or desertion of some Croat troops were also considered factors in the unexpectedly easy German triumph.

Serb resistance did not end with the surrender of the Yugoslav armies, however. Chetnik (komitaji) bands formed in the mountains and continued guerrilla warfare. Secret organizations of terrorists and saboteurs fought an underground warfare with the Germans and their native collaborators in the cities

and villages. These guerrilla fighters were believed responsible for the explosion of an ammunition dump in Smederovo Fort south of Belgrade on the night of June 5. Some 1,500 persons were reported killed, including 800 German soldiers, and more than 2,000 injured. Small units of the Yugoslav fleet, air force, and army managed to escape to Greece and continued to fight along with the British there and in the Middle East.

The Government-in-Exile. Soon after the invasion, King Peter and the Government withdrew from Belgrade to Sarajevo in southern Yugoslavia. From there they fled to Athens, after the King had issued a proclamation asserting that he would continue the struggle on foreign soil and "until my very last breath hold high the banner of Yugoslavia." From Athens Peter and most of his Cabinet officials went by plane about April 20 to Jerusalem and later to Cairo, where they established a Government-in-Exile. Prince Paul was reported to have been interned by the British Government in the East African colony of Kenya.

After the Allied loss of Greece and Crete had ended hope of a counter-offensive in the Balkans for the time being, King Peter and his Ministers moved their refugee Government to London, arriving there June 21. The Government joined the various other Allied powers in the agreements concluded in London June 12 and September 24 (see GREAT BRITAIN under *History* for details). Diplomatic relations with Russia, which had been severed by Moscow in May to placate the Reich, were restored in mid-July after the outbreak of the German-Russian war. Reorganization of the Government was announced August 24, the principal change being the appointment of two new Vice Premiers. They were Dr. Juraj Krnjević, who replaced Vladimir Matchek as representative of the Croats, and Miho Krek, representing the Slovenes. Vice Premier Slovđan Jovanovič remained in office as representative of the Serbs. King Peter came of age on September 6, an event celebrated at a ceremony in a London church. Along with the Allied Governments, the United States continued to recognize the Simovič Government as the legal representative of the Yugoslav state. American and Russian Ministers presented their credentials to King Peter October 3.

Dismemberment of Yugoslavia. Meanwhile Yugoslavia was being dismembered and scourged by the conquerors. Puppet states were set up in Croatia and Montenegro, to be ruled by Italian princes as Italian protectorates. Northwestern Slovenia was partitioned between Germany and Italy. Italy also annexed Dalmatia, a number of islands off the Croatian coast, and the Croat districts of Castua, Susak, Cabar, and part of Delnice in the vicinity of Fiume. Dalmatia, the population of which was over 70 per cent Croat, was established as a separate governorship, administered by a governor at Zara under the direct jurisdiction of Premier Mussolini. Italian-controlled Albania was extended to include the Kossovo district of Yugoslavia on the east. These territorial adjustments gave Italy direct or indirect control of the entire Adriatic coast of Yugoslavia and a considerable hinterland.

On the east, Hungarian troops moved in on the heels of the invading Germans, despite the Hungarian-Yugoslav pact of eternal friendship of Dec. 12, 1940, and occupied all or most of the districts of Backa and Banat, ceded by Hungary to Yugoslavia at the close of World War I. Bulgaria, by the same procedure, seized the Serbian districts of Macedonia. Serbia, reduced to approximately its 1912 boundaries, was occupied by German troops

but was ruled as a German protectorate by a puppet Serb government at Belgrade.

The new German-Italian frontier through northwestern Yugoslavia was fixed by an agreement signed in Berlin July 8. According to an Italian communiqué of July 9, it followed the former Yugoslav-Italian border line from the Adriatic to a point north of Fiume and then turned eastward to the Croatian frontier, giving Germany a considerable part of northwestern Slovenia and Italy the Dalmatian coast.

The frontier between Croatia and Serbia was fixed in a decree issued June 7 by the Croat dictator, Ante Pavelich. This gave Croatia the territories belonging to Austria-Hungary between 1908 and 1918 as far east as the border between old Serbia and Bosnia. The frontier between Croatia and Montenegro was delimited by a Croat-Italian accord signed in Zagreb October 27. It followed roughly the 1914 border between Austria-Hungary on the one hand and Montenegro and Serbia on the other.

Within a short time after the Yugoslav military collapse, disputes arose among the occupying powers over the division of border territories. The new Croat state disputed Italian and Hungarian territorial claims. Bulgaria and Italy bickered over the new Albanian-Bulgarian frontier. The districts of Backa and Banat, forming Vojvodina, were described as a "trading ground for Germany, Hungary, and Croatia." By the end of 1941 the boundaries of the various occupying powers still were not fully delimited.

The Croat Kingdom. Immediately after German troops captured Zagreb on April 10, a separate Croat state was proclaimed by Dr. Ante (Anton) Pavelich and Slavko Kvaternik, leaders of a Croat terrorist organization, the Ustachi (Ustasi), which was widely held to be responsible for the assassination of King Alexander of Yugoslavia at Marseille, France, in 1934. Since the King's assassination, Pavelich had directed separatist activities and propaganda in Croatia from his refuge in Italy. He was reported to have been heavily supplied with funds by both Italy and Germany, but his followers in Croatia remained insignificant in number. They carried on an increasingly bitter warfare with Dr. Matchek's Croat Peasant party, which in the last parliamentary elections won the support of 90 per cent of all Croat voters.

Under the protection of German arms, Pavelich assumed the headship of the newly proclaimed Croat state and named Kvaternik as Premier. In a proclamation issued April 11, he urged Croat soldiers in the Yugoslav armies to revolt against their Serb leaders. Apparently some of them did so, for the Serbs charged that Pavelich's activities contributed to their quick defeat. Recognition of the new Croat state was extended by Germany and Italy April 15.

Totalitarianism Introduced. Pavelich immediately established a totalitarian regime based on Nazi principles, with the Ustachi as the sole political organization. All existing parties were dissolved, including the Croat Peasant party. Those Peasant party leaders who had not escaped abroad were imprisoned. An anti-Jewish pogrom was launched. The Serbs in Croatia experienced the same harsh treatment as in districts under direct German occupation. On May 7 a curfew for all Serbs in Zagreb was decreed between 6 p.m. and 8 a.m., with death as the penalty for violation.

Treaties with Italy. Restoration of the Croatian monarchy, extinguished in 1097 A.D. was proclaimed in Zagreb on May 14. On May 18 a Croat delega-

tion arrived in Rome and offered the Crown to a Prince of the House of Savoy. Aimone, Duke of Spoleto, was selected for the post on the same day and installed in a ceremony attended by King Victor Emmanuel and Premier Mussolini. At the same time Italy concluded treaties with the new Croat kingdom confirming the annexation of Dalmatia and the other Croat districts described above. Croatia retained an outlet to the Adriatic through Ragusa and was granted special port facilities in Spalato.

The Croat kingdom agreed not to establish land, sea, or air forces or fortifications unless approved by Italy; to "collaborate with the Italian armed forces in everything that concerns the organization of its army"; and to conduct its foreign affairs in conformity with the spirit of the "treaty of guarantee and collaboration." Italy, in return, guaranteed the independence and territorial integrity of the Croat kingdom during the life of the treaty, fixed at 25 years. Provision was made for Italo-Croat customs and monetary accords, railway and maritime agreements, and pacts on cultural interchange and treatment of minorities. Croatia was thus tied economically as well as politically to Italy. Italian troops were to remain permanently stationed on Croatian soil, although organization of a Croat national army was started immediately.

Croat Opposition. Upon his return to Zagreb, Pavelich won the Ustachi's acceptance of the arrangements concluded in Rome. But the imposition of an Italian ruler and of the territorial and other accords with Italy aroused resentment among large numbers of Croats. Pavelich's course was denounced by the Croat members of the Yugoslav Government-in-Exile and by the Croat organizations in the United States and other foreign countries. Within Croatia, public antipathy to the Pavelich regime was reported to have provoked wholesale sedition trials and other measures of repression. Unrest was furthered by large shipments of food and raw material reserves to Germany and Italy. On May 10 an agreement was announced for sending 50,000 Croats to the Reich to relieve the German labor shortage. Pavelich conferred with Hitler at Berchtesgaden on June 6, when other measures of economic cooperation were discussed. On June 15 Dr. Pavelich signed the Axis alliance in a ceremony held in Venice.

The Pavelich regime on June 22 demanded the immediate closing of the United States consulate at Zagreb. Under an agreement signed between Croat and German officials November 7, all Yugoslav nationals of German origin in the Croat province of Ljubljana were to be transferred to Germany. Berlin announced on December 14 that the Pavelich regime had declared Croatia in a state of war with the United States.

Meanwhile conditions in Croatia had remained so chaotic that the Duke of Spoleto refused to take up his residence in the Croat capital. Conditions became worse after the Serb rebellion (see below) gained headway. Many Croats joined the Serbs in passive and active resistance to Pavelich and his Axis overlords. At the demand of the Italian Government, Pavelich on August 23 authorized the Italian army to occupy the entire Adriatic coastal region of the new Croat state because of the spreading guerrilla warfare. The population of this region was ordered to surrender all firearms within 48 hours and was forbidden to travel without special authorization.

Friction with Italy. The military occupation caused friction between the Pavelich "Government" and Italy. Anti-Italian demonstrations in Zagreb by

Croat adherents of Pavelich were reported. Pavelich himself showed a growing disposition to turn to Hitler for guidance and support rather than to Mussolini. German intervention in Croat affairs led in turn to friction between Rome and Berlin (see ITALY under *History*). Meanwhile the revolt against Italian rule gained headway both in the Italian-annexed Croat regions and in that part of the new Croat state under Italian military occupation. Mussolini on October 7 decreed the death penalty for plotting against the Italian state in the annexed areas. On October 28 the special Italian military tribunals were authorized to impose the death penalty for sabotage and other harsh penalties for hoarding, inciting to revolt, disseminating false reports, etc. Yugoslav sources reported an Italian "reign of terror" throughout Dalmatia during the last months of the year.

Ustachi Excesses. At the same time Pavelich's Ustachi, which had developed its own secret police and military units on the Nazi model, was proving an even greater scourge to Serbs and Croats loyal to the Yugoslav Government-in-Exile. Mass executions of Serbs, reported from various parts of Croatia, indicated an attempt at systematic eradication of the entire Serb population of Croatia. Intelligence reports to Ankara, Turkey, stated that the Ustachi had slaughtered between 300,000 and 340,000 Serbs and pro-Yugoslav Croats between May and mid-October. More than half a million Serbs had fled from Croatia into Serbia proper or had joined the Chetniks operating against the Axis throughout Yugoslavia. Among the prominent Croats reported executed by the Ustachi were several associates of Dr. Matchek.

While a few members of the Roman Catholic clergy in Croatia lent their support to the Pavelich regime, most of them publicly condemned some of its totalitarian measures, especially the introduction of racial legislation. The Archbishop of Zagreb was condemned to death for public criticism of such measures, but his sentence was later commuted to 20 years' imprisonment.

Situation in Montenegro. A situation almost identical with that in Croatia developed in Montenegro. On July 12 an Italian-appointed National Assembly at Cetinje proclaimed the restoration of Montenegro's independence and the establishment of an Italian protectorate. The assembly sent to Rome a delegation which petitioned King Victor Emmanuel to appoint a regent pending the enthronement of a King. Mussolini was reported to have encountered great difficulty in inducing any eligible candidate to accept the throne. A spokesman for the Yugoslav Government-in-Exile said on October 21 that Montenegro was in revolt, that seven members of the puppet National Assembly had been assassinated, and that Italian troops and administrators had been driven out of the interior of the country. From German-controlled news sources in Zagreb came reports that thousands of Montenegrins had been deported and held in Albanian concentration camps for resisting Italian rule.

Martyrdom of the Serbs. The sufferings and hardships inflicted upon anti-Axis Croats and Montenegrins were relatively mild compared to the punishment meted out to the Serbs for defying the German Fuehrer. The Axis powers made every effort to conciliate Croats and Montenegrins who were not openly hostile. But toward the Serbs and the Jews the Germans adopted a policy of cruel repression that rivalled the treatment of conquered Poland. Execution, imprisonment, or forced labor was the lot of every Serb judged guilty of supporting the Simovich Government. The country

was looted of food, farm animals, household goods, and possessions of every kind. Guerrilla attacks upon Germans were punished by large-scale executions of men in neighboring villages and the deportation of others to Germany for forced labor.

Terror failed to reduce the Serbs to the desired state of docile subservience. Peasants and industrial workers resisted German efforts to induce them to work. Promises were then made that those resuming productive labor would be well fed and well paid. When this proved unavailing, a decree was issued early in August introducing compulsory labor for all Serb men and women between the ages of 17 and 45 years. This caused a new exodus of men to join Serb guerrilla forces in the mountains.

The Nedich "Government." The German authorities made a new move to weaken Serb opposition through the establishment in Belgrade on August 29 of a puppet Serb administration headed by Gen. Milan Nedich, former Yugoslav Minister of War. In a radio broadcast on September 1, Nedich appealed to the Serbian people to halt the "rivers of blood" flowing all over Yugoslavia lest they "dig their own grave."

Acting under the orders of the German military commander, Nedich recruited a Serb military force of some 10,000 men to aid the Germans in combating the patriot forces in the hills. He also succeeded in winning the cooperation of a number of other prominent Serbian officers and pro-Axis civilians, who entered his Cabinet. While Nedich and his associates were regarded as traitors by many Serb patriots, some Serbs abroad credited them with seeking to save the nation from possible extermination.

Late in October General Nedich took the initiative in arranging a peace conference with Col. Draja Mikhailovich, the patriot commander. In their discussions at Valjevo, southwest of Belgrade, Mikhailovich was said to have presented the following conditions for the conclusion of peace—immediate cessation by the German and pro-Axis Serb armies of the wholesale executions of civilian Serbs, withdrawal of all German troops except from Belgrade and Nish, and that "Serbia be allowed to exist in peace." General Nedich rejected these terms, after referring them to the German commander in Belgrade. The implacable warfare was then resumed on an intensified scale.

Progress of Serb Revolt. Under the able direction of Colonel Mikhailovich, Serb resistance to the invaders and the Nedich puppet government made steady progress. Mikhailovich assumed command of the patriot forces in the Serbian and Bosnian mountains in April. There he bided his time until the withdrawal of large numbers of German troops for service on the Russian front afforded opportunity for a large-scale revolt.

Beginning in July and August the patriot bands launched an offensive against the occupational forces that soon placed them in serious difficulty. Large areas of the country fell under the complete control of guerrillas. Axis garrisons were isolated and besieged in a number of towns and cities. Railway and other communications were disrupted. Detachments of Germans were ambushed and annihilated without regard for the fearful retribution exacted by the Germans from inhabitants of the district. Neutral observers reported that the resulting chaotic conditions resembled the most lawless periods of the Middle Ages.

As early as July the Germans warned that 100 Serbs would be killed for every German or pro-Axis Croat shot by the Chetniks, and this grim

threat was carried out. The Inter-Allied Information Committee in London, representing the various governments-in-exile, estimated on November 19 that "in addition to the massacres committed by the Germans, Hungarians and bandit gangs of Ustachi, upward of 5,000 people have been executed by the Germans as hostages in the course of the last three months." The number of Serbs massacred by Axis police, troops, and the Gestapo was estimated by the Yugoslav Government-in-Exile on November 15 at 350,000. This report, probably somewhat exaggerated, served only to spur the Chetniks and other patriot forces to greater efforts.

Toward the end of September the Germans were obliged to send three divisions of troops into Serbia to assist the occupational forces and General Nedich in coping with the patriot armies. A series of battles ensued in which German artillery and dive bombers wiped out the town of Uzice and other centers under the control of Mikhailovich's forces. Chetnik terrorist bombings and assassinations in Belgrade led the Germans to threaten an artillery bombardment of the already badly damaged capital. The city of Skolpje was reported to have been reduced from 60,000 to 20,000 inhabitants by executions, imprisonments, and the flight of numerous residents to the mountains.

German armored units sent on punitive expeditions into patriot-controlled districts encountered fierce resistance. The use of artillery, dive bombers, tanks, and parachute troops failed to shatter the Serb forces, estimated in mid-November at some 80,000 men. On November 15 Premier Simovich in a London broadcast asserted that the patriot forces actually controlled three-fourths of Serbia. He charged that after pitched battles between German occupational forces and guerrillas the Germans had executed 8,100 Serbs in the cities of Belgrade, Sabac, Kragujevac, and Kraljevo. During the November fighting, more than 1,500 leading professional men and members of prominent Serb families were seized in Belgrade as hostages by the Germans and many of them were said to have been executed.

The failure of the determined German effort to crush the guerrilla forces became evident in December, after weeks of heavy fighting. A gradual withdrawal of German columns from the central and southwestern provinces of Serbia was reported. The forces under Colonel Mikhailovich were said to be continually increasing. In recognition of this achievement, the Yugoslav Government-in-Exile in mid-December promoted him to the rank of a full general.

The Bulgars and Hungarians were reported to have exhibited similar severity in their treatment of Serbs in the annexed districts. Thousands of Serbs were expelled to the German-occupied areas of the country, while other thousands died in mass executions and in the cruel guerrilla warfare that continued in the face of the most extreme repression. See *BULGARIA* and *HUNGARY* under *History*.

Also see *GERMANY*, *GREAT BRITAIN*, *GREECE*, *ITALY*, and *UNION OF SOVIET SOCIALIST REPUBLICS* under *History*; *LABOR CONDITIONS* under *Employment*; *LEND-LEASE ADMINISTRATION*; *NAVAL PROGRESS*; *UNITED STATES* under *Foreign Affairs*.

ZANZIBAR. A British protectorate in East Africa, comprising the islands of Zanzibar (640 sq. mi.) and Pemba (380 sq. mi.). Total area, 1,020 square miles. Population (1931 census), 235,428 (Zanzibar, 137,741; Pemba, 97,687). Capital, Zanzibar, 45,276 inhabitants. Cloves (30,320,924 lb. exported from July, 1940, to June, 1941), copra, sesame oil,

and tobacco are the main products. Trade, including bullion and specie (1939): £835,776 for imports and £1,167,028 for exports. Shipping (1939): 2,537,549 gross tons entered. Roads (1940): 243 miles. Budget (1940): £445,800 for revenue and £452,216 for expenditure. The nominal ruler is the Sultan. A British Resident administers the government. There is an executive council over which the Sultan presides, and a legislative council of 15 members including the British Resident as president. Sultan, Seyyid Sir Khalifa bin Harub (succeeded Dec. 9, 1911); British Resident, Henry G. Pilling (appointed Dec. 23, 1940).

ZINC. After the memorable slump in zinc mining and refining in 1939 caused by the tariff on imported zinc, the metal staged a decided comeback in 1940 under the spur of the United States defense program and orders from Britain. After September, 1940, inventories of consumers' stocks showed a rapid decline, and the urgency of war requirements began to be sharply felt early in 1941. Zinc ores, slab zinc, and all zinc manufactures were put under export control, February, 1941, by the Priorities Division of the OPM; and by April 30 stocks had decreased 42 per cent. Zinc was put under strict allocation by the OPM in July. The price was stabilized at 7.65¢ a lb. early in 1941; a mandatory ceiling price of 8.65¢ a lb. was fixed by the OPA in October.

The total 1941 production of zinc in the United States, as estimated by the U.S. Bureau of Mines, was about 732,950 short tons, some 10 per cent more than the 665,068 tons produced in 1940. During the first six months, average monthly production of slab zinc was 88,482 tons. In 1940 the monthly average was 58,842 tons. During July-November, 1941, production per month rose to 73,816 tons. This rate of increase is outstanding in that it was achieved largely through the rehabilitation and expansion of existing plants. Production of slab zinc in 1942 is expected to reach 989,000 net tons including the output from some four or five new plants and from the two smelters owned by the American Smelting and Refining Company, one at Rosita, Mexico, and the other, the huge new electrolytic smelting plant at Corpus Christi, Tex., scheduled to begin production in August, 1942.

Two million tons of zinc concentrates were consumed in 1941 in the production of domestic metal and zinc pigments; 1,600,000 tons produced in the United States, 400,000 tons imported. In 1942 the production of 1,750,000 tons of concentrates is expected from United States mines, stimulated by the rise in prices and the 6-day week; hence, something like an additional 450,000 tons of foreign imports will be needed. Canada and Mexico will be able to supply a good portion of these. The rest will come from South America and Australia if the United States and Britain can keep control of the seas.

Zinc consumption in 1942 as estimated by the U.S. Bureau of Mines will reach 936,000 tons: 312,000 tons for galvanizing, 240,000 tons for brass mills, 120,000 for die casting, 84,000 for rolling mills, 18,000 tons for oxide plants, 150,000 tons for export, 12,000 tons for miscellaneous uses. The zinc industry puts potential 1942 consumption at 1,019,000 tons or 30,000 tons more than production. For production index, see *BUSINESS REVIEW* under *Minerals*.

ZIONISM. See *PALESTINE*; Jewish organizations listed under *SOCIETIES*.

ZOO, Bronx. See **ZOOLOGY.**

ZOOLOGY. General. During 1941 the war interfered only slightly with the transfer of journals and other publications between the United States and Great Britain, but because of such interference in the case of other countries a summary of zoological progress must necessarily be somewhat incomplete. The laboratory at Plymouth, England, was seriously damaged by bombings and while these damages were in large part repaired the fact that the library had been moved to a safer storage place was a handicap to research. The Marine Biological Laboratory at Woods Hole, Mass., reported a large attendance, only slightly smaller than that of the banner year of 1940. The Marine Laboratory of the Carnegie Institution of Washington, founded at the Dry Tortugas, Florida, by the late Dr. A. G. Mayor, was discontinued. At Bermuda the buildings and grounds of the Bermuda Biological Station were leased to the U.S. Government for a temporary hospital connected with the U.S. base there. Arrangements for a limited amount of research work were made at the government aquarium at Flatts. The U.S. Fish and Wildlife Service established a laboratory at Little Port Walter in southeastern Alaska for the study of the natural reproduction of the pink salmon. It is expected that eventually laboratory facilities will be available for visiting biologists (*Science* 94, p. 295).

The New York City Aquarium at Battery Park was closed, probably to be reopened later at some locality not yet determined. The New York Zoological Society at its Zoological Garden in the Bronx, began (some units are already finished), a program for, instead of exhibiting animals in cages or small plots, displaying them in larger areas which so far as possible duplicate their natural environments. Invisible barriers instead of fences keep the animals in place and so far as mutual hostilities do not prevent, the various characteristic inhabitants of each area are included.

The American Society of Zoologists met at Dallas, Texas, from December 29 to 31 under the presidency of R. E. Coker in connection with Section F (Zoology) of the A.A.A.S.

That mutual sterility is a valid distinction between different species was disputed by Gates (*Science* 93, p. 337). "Sterility is more or less an accidental condition which may arise early or late in the differentiation of particular species." "Interspecific sterility is not a consequence of a long period of specific differentiation but may be due to a primary change in chromosomes which may not be noticeable but which leads to further changes resulting in sterility. Evolutionary progress due to chromosomal changes may arise from small as well as from large mutations."

Protozoa. An important publication is *Protozoa in Biological Research*, containing chapters contributed by various writers and edited by Calkins and Summers. Jennings (*Science* 94, p. 447), (see 1940 YEAR BOOK), developed further the idea that social organization begins with the protozoa and can be recognized in a primitive form in all unicellular organisms. Not all members of the same protozoan genus are alike in detail, his discussion being confined largely to *Paramecium bursaria*. Here individuals of one clone differ in constant and characteristic features from those of another. In a clone he could distinguish periods of youth, maturity, old age, and death. In this species can be recognized three groups of distinct clones and sixteen different sex types. Cloff, Dewey, and Kidder (*Biol. Bull.* 81, p. 221), found that in three species

of the protozoan genus *Bresslana* the food is taken into a food vacuole and is immediately killed by an inrush of acid, the hydrogen concentration being between pH 3 and pH 4.2. During digestion the food becomes alkaline. The faeces are acid.

Sponges. Svihla (*Science* 94, p. 278), announced the discovery of the fresh water sponge *Heteromyenia baileyi* on the island of Maui in the Hawaiian Islands. Apparently this had been earlier found by Degener in Oahu but no published record was made. This he stated was the first discovery of these animals east of the Fiji Islands.

Annelids. Although the swarming of the Atlantic and Pacific "palolo" at the breeding season is a well known phenomenon, Clark and Hess (Carnegie Institution Publication No. 554, pp. 21 to 70 and 71 to 81), in their study of the Atlantic form, offer the first comprehensive attempt at an explanation. Earlier workers have noted a correspondence between the time of swarming and certain phases of the moon, but no causal connection has been found nor has any other explanation of the cause of the swarming proved satisfactory. The author's conclusion is that the time of swarming is not as definitely limited to certain days in the month as earlier writers have supposed, for a series of minor swarms may precede or follow the main one or the major swarm may not appear at all, only minor ones occurring at intervals during the month. The swarm may take place at any time of the lunar cycle except that of full moon, but if a major cycle does appear it is within five days of a quarter moon. Unless the reef in which the annelid is living is protected, a wind velocity of over eight miles an hour is sufficient to inhibit a swarming, due to wave action and water disturbances caused by such velocity. It was concluded that three factors, the lunar cycle, maturity of the sex products, and wave action, determine the time of swarming. The third quarter moon has a stronger influence than has the first, and the sensitivity of the animal to swarming stimuli progressively increases with the ripening of the sex products and continues even after this point has been reached.

Mollusca. In earlier papers Coe (see 1940 YEAR BOOK, under SEX DETERMINATION) described the rhythmical changes of sex in the shipworm *Teredo navalis*. Later (*Biol. Bull.* 81, p. 168), he showed that similar conditions occur in other shipworms and gave in detail some steps in this process. He states further that in all dioecious pelecypods that have been sufficiently investigated there is evidence that to a greater or less degree an hermaphroditic condition exists. Here "the sex-differentiating mechanism is so delicately balanced between the two sexual tendencies that relatively slight differences in environmental conditions may be potent in determining which of the two contrasted aspects of sexuality shall be realized." McGinitie (*Biol. Bull.* 80, p. 18) described the feeding process in a number of pelecypod species. Feeding consists first, in the formation of a sheet of mucous over the gill surfaces which strains out food particles from the current of water passing through the gill. This mucous layer is then passed forward by ciliary action to the mouth as a mucous string. Loosanoff and Engel (*Science* 93, p. 238), reported that large numbers of young oysters are killed by the mollusks *Anomia* and *Crepidula*. The spat of these genera settle down at about the same time as do those of the oyster and because of their more rapid growth soon cover over the young oysters and kill them by depriving them of food and oxygen.

Crustacea. Hess (*Biol. Bull.* 81, p. 215) found

that in the crayfish *Crangon*, it is temperature rather than light which influences diurnal moulting. At the Dry Tortugas this is when the temperature rises to or above, 29° C. In females carrying embryos an inhibitory substance delays the moulting process even at this temperature.

Insects. In a presidential address before the Association of Economic Entomologists, Smith (*Jour. Ec. Ent.* 34, p. 1), gave reasons for his belief that insect races may materially change their characteristics so that treatments that at one time have been efficient in insect control may because of these changes become useless. This necessitates constant vigilance on the part of the entomologists. Since insects respond to color stimuli, this should be considered in devising traps. Whittenden and Barclay (*Jour. Ec. Ent.* 34, p. 219), found that for the Japanese beetle the most efficient traps were those colored yellow. Also, these traps do their best work if suspended at a height of 30 inches above the ground. Krog and Zenthen (*Jour. Exp. Zool.* 88, p. 1), showed that in insects flight is possible only at a minimum temperature which in general is above 30° C. In preparation for flight this temperature may be reached through wing vibrations.

The third and last volume of an important publication on the mosquitos of the Ethiopian region, by F. H. Edwards, appeared in 1941. Of especial value is the portion given to descriptions of the characters used in systematics. *Nature* (148, p. 137), reported during the first week in July an invasion in England of the clouded yellow butterflies, *Colias croceus*. Similar invasions have been recorded as far back as 1859.

A controverted question is as to the location of receptor organs in insects. Frings (*Jour. Exp. Zool.* 88, p. 65) thought that in the blowfly antennal organs function as direction-distance receptors, labellar as non-directional which in combination with the chemoreceptors of the labella serve for reception of combined olfactory and gustatory stimuli.

Thone (*Science* 94, p. 6, Suppl.) reported that the Japanese beetle, regarded as one of the most dangerous pests of the eastern United States, shows signs of succumbing to control measures. Areas which earlier showed serious infection now indicate only a mild one so that the insect appears there to be merely a "normal nuisance" rather than a "scourge." This in part is due to the activity of natural enemies but largely to preventive treatment. Of these the most efficient seems to be bacterial infection of the grubs, their bodies later being dried and pulverized and sown in the ground where other grubs become infected. *Science* (94, p. 9), reported the possible value of "chemical lures" instead of poisons in the treatment of insect pests. Since insects are attracted to the plants on which they feed by a chemical stimulus, it might be possible to trap them by baiting a trap with substances giving off the same odor as that of the natural food plant. As examples, the cabbage butterfly and the tent caterpillar were attracted to filter paper impregnated with the chemical compounds preferred by these animals in their natural food. Termites are able to digest wood through the aid of their intestinal protozoa. Dropkin (*Ecology*, 22, p. 200), found that there is evidence that specific protozoa are found in definite species of termites so that it would be possible to determine a species of termite by a study of their protozoa. See ENTOMOLOGY, ECONOMIC.

Fishes. The first of a series of proposed volumes on Australian fishes appeared in 1941 and deals

mainly with the sharks and their allies. The work is important from a systematic standpoint, but also brings in much information on their breeding habits as well as a discussion on the much debated question as to whether they attack human beings. Gudger (*Jour. Mitchell Soc.* 57, p. 57) described the feeding of the whale shark. The animal lies vertically in the water and appears to draw in small fish, such as sardines, by a sucking movement. Beebe (*Science* 94, p. 300) reported the discovery off the coasts of Mexico and Costa Rica, of two specimens of young Florida sailfish. Superficially, although only 42 and 84 mm in length, they resemble the adults in external characters such as the large dorsal fin, but they are covered with scales and have teeth. These latter characters disappear in the adult, with the addition of a large number of changes transforming the fish from a snapping to a slashing method of attacking and feeding.

It has been suggested that fish originated in fresh water, their stream-lined form being an adaptation to swift moving river currents. Gunter (*Am. Nat.* 75, p. 188) disputes this theory so far as it relates to body form, because the stream of a river is not a steady one such as is found in a flume, but there are many currents and eddies whose effect on the fish would be very far from giving it a stream-lined character. Powers (*Ecology* 22, p. 1) gave the results of experiments which indicate that it is physico-chemical carbon dioxide gradient that determines migratory movements of salmon in their approach to the mouths of rivers. In fish of the genus *Gambusia* a portion of the fin of the male is modified to serve as an intromittent organ. Turner (*Jour. of Morph.* 69, p. 161) described in detail the structure of both male and female fins and, since castration prevents the development of the peculiar male structure, he decided that a sex hormone has something to do with its development. In another study (*Biol. Bull.* 80, p. 371) he records that young females treated with ethinyl testosterone will to a certain extent develop this characteristic male organ. An important monograph is "A Systematic Catalogue of the Fishes of the Dry Tortugas," by Longley and Hildebrand (Carnegie Inst. of Wash. Papers from the Tortugas Laboratory, Publication No. 535). Mostly taxonomic in character the paper contains many ecological notes made by the late Professor Longley who was a pioneer in the use of the diving helmet in the under-water study of fishes.

Amphibia. The common spotted newt of the eastern United States has an aquatic and a terrestrial mode of life. In the former it is sexually mature and is of an olive green color with red spots along the sides. It hatches from eggs laid in the water and in the infantile stage is red in color with lateral spots like those in the adult. In this phase it crawls out of the water and spends some time in damp places in the woods. Later it crawls back into the water, assumes the adult color and becomes sexually mature. As an explanation of the immediate stimulus leading to the migration into the water Chadwick (*Jour. Exp. Zool.* 86, p. 175) found that intra-peritoneal injection of the anterior pituitary extract from a number of different animals into the newts of the red phase would stimulate them to this migratory activity. A similar result followed the injection of prolactin from the mammalian pituitary.

Reptiles. Hibernation in desert-living reptiles is accomplished by burrowing into the ground. Cowles (*Ecology* 22, p. 125) studied the hibernation phase of a large number of reptiles on a

ranch in southern California where these were turned out of the soil by the operations of "tracer-scrapers." He found that most of the reptiles collected hibernate at a comparatively shallow depth, the majority lying at less than 13 inches, while the extreme depth was 30 inches. The average soil temperature was 16.1° C., the temperature range being from 0° to 20° C. Hibernation protects the animals from predators as well as from unfavorable climatic conditions.

Birds. In 1940 the Hudson's Bay Company sent an expedition to hunt for the breeding places of Ross's goose, *Chen rossii*. Taverner (*Canadian Field Naturalist* 54, p. 127) reported that these had been found in an unnamed lake on a tributary of Perry River which river opens into Queen Maud Gulf at about 120° W. Chance (*Review in Nature* 147, p. 156) wrote the "Truth About the Cuckoo." He thought that cuckoos mate for life, but this was not definitely proven. The female watches a nest and lays her eggs at the time when the nest is in the best condition and the number laid in a season may be as many as twenty-five. The eggs are laid directly into the nest and never carried by the beak. In general there is a likeness between the cuckoo egg and that of the parasitized bird. The magazine *Bird Lore*, founded thirty-six years ago by F. M. Chapman has changed its name to *Audubon Magazine* and has enlarged its field so as to cover other animals than birds.

The term "migration" has been variously defined, perhaps a reasonably satisfactory one being that it applies to an animal activity in which all or nearly all of the members of a group periodically move to some more or less distant region from which they later return to the original locality. Whether this return must necessarily be included in the conditions of the definition is a disputed point. Many explanations have been offered but none have been generally accepted. Woodruff (*Auk* 53, p. 463) offers the tentative explanation of "periodic response." This migratory habit is only one of many biological rhythms all of which are correlated with periodic environmental events, these being daily, lunar, seasonal, and secular. Migrations are forms of rhythms correlated with

these environmental periodicities. In some cases the migrations were merely conditioned behavior patterns which through mutation or natural selection have become so fixed in heredity that they recur independently of environmental stimuli. Munro (*Canadian Jour. of Research* 19, p. 113) reported on the scaup ducks of Canada, giving many details of their courtship and mating. In the interior these birds are important as food and for sport but near the coast their food importance is less because the flesh is not so tasty. To a certain extent they eat the same food as do fishes, but probably this is not of very much economic importance.

Mammals. Because of indiscriminate killing by whalers the elephant seal, whose oil has a commercial value, had been largely exterminated in its natural habitat, the coast of Lower California. Williams (*Natural History* 48, p. 144) reported that the Mexican government has given military protection to these animals and as a consequence the size of the herds has greatly increased. The ribbon seal is widely distributed in the north Pacific but little is known about its structure and habits. Inukai (*Jour. Fac. Sci., Hakkaido Imp. Univ., Japan*, 7, p. 299) has given a preliminary report on these animals. They can move rapidly on land and, because of their greater ferocity, are much more dangerous to approach than are the fur seals. Aldous (*Jour. Mammalogy* 22, p. 18) found that chipmunks are both animal and vegetable feeders and concluded that they may be beneficial in that they eat insects. McMurry and Sperry (*Jour. Mammalogy* 22, p. 185) found that feral domestic cats are much less of an enemy of birds than is generally supposed. Examination of cat stomachs showed that of food derived from other animals about 2 per cent are birds, 12 to 25 per cent mammals, and 54 to 85 per cent insects. In residential sections a large part of the food of these cats is collected from garbage. Thone (*Science* 93, p. 7, Suppl.) argued for a revision of the attitude of conservationists toward fur bearing animals in general because many of these generally listed as pests have a commercial value.

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